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ABSTRACT

The document is the first volume of a four-part report of a study conducted to evaluate and assess the national state of clinical education and training of allied health manpower. The final report briefly reviews the development of education for allied health manpower, the present status of manpower requirements, the nature of clinical education, and the rationales leading to a national assessment of clinical education. It also discusses some generic considerations in allied health clinical education with a discussion of their present issues and problems and suggestions for recommended actions to solve these problems. These areas are: (1) content of clinical education, (2) credentialing in clinical education, (3) the management of clinical education, (4) requirements for human and physical resources, (5) students and clinical education, and (6) financing clinical education. Suggestions for cooperation among educational institutions; health care institutions; professional associations; and the Federal, State, and local governments are discussed in relation to the improvement of clinical education. A list of task force members and a summary of the report's recommendations are included. (Author/EC)

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Volume I

Final Report
National Assessment of Clinical Education of Allied Health Manpower

(Contract NO1-AH-24345)

HEALTH RESOURCES ADMINISTRATION
DEPARTMENT OF HEALTH, EDUCATION,
AND WELFARE

Washington, D. C.

August 30, 1974

U S DEPARTMENT OF HEALTH,
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ALLIED HEALTH CLINICAL EDUCATION-- TASK FORCE AND SUBCOMMITTEE MEMBERS

ALLIED HEALTH CLINICAL EDUCATION--TASK FORCE AND SUBCOMMITTEE MEMBERS

The role of the Task Force and its subcommittees as advisors to the study team was extremely important. The study team wishes to thank each individual member of the Task Force and its subcommittees for their efforts, expertise, and knowledge which they brought to bear on the problem.

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PROLOGUE: BASIS FOR VIEWING THE EDUCATION AND TRAINING OF ALLIED HEALTH MANPOWER

The following section describes the study objectives and methodology and sets forth several concepts and principles of central importance to the study.

1. THE STUDY OBJECTIVES AND SCOPE ARE A RESPONSE TO THE CONCERNS OF THE ALLIED HEALTH COMMUNITY OVER CLINICAL TRAINING

The Health Resources Administration (HRA) has identified the following goals relative to allied health:

- To increase the allied health work force
- To improve the quality and efficiency of allied health manpower education and training programs
- To improve overall employment opportunities
- To improve overall educational opportunities

Problems impeding attainment of these goals are both specific to individual allied health occupations and shared by all. Clinical education was identified as an area of major concern across allied health occupations. In particular, the medically related allied health disciplines were found to share distinctive problems. These problems center on the duality of the mission of institutions providing clinical education, in which educational and patient care objectives are inextricably related, and may in some cases be in conflict.

This national assessment was commissioned in June 1972 with the following general objectives:

- To identify and investigate problems encountered in the provision of clinical education and training for allied health manpower
- To assess the importance of these problems
- To recommend constructive approaches to solution of these problems
- To recommend, within these approaches, appropriate roles for governmental and nongovernmental agencies

The study was to be accomplished in conjunction with a task force of individuals who are knowledgeable in one or more areas of concern in the education of allied health manpower. The study emphasis reflects concerns enunciated by various participants in allied health and clinical education during preliminary investigations by the Bureau of Health Resources Development.

(1) An Investigation of Generic Problems in Clinical Education Reflecting HRA Goals Is Outlined in the Scope of Work

The scope of this study is a reflection of two dimensions of the current approach by the Bureau of Health Resources Development to allied health manpower:

- The premise that the allied health occupations have basic similarities despite acknowledged differences.
- A set of objectives derived from the broad goals of HRA outlined previously. These objectives, which are more specific than the goals, are directed toward seeking improvements in:
    - The coordination which exists between educational and health service agencies
    - The efficiency and effectiveness of the educational process which relates to the quality of academic and clinical education programs
    - Opportunities for career advancement
    - Increasing representation of special interest groups such as minorities and former military personnel in the allied health work force
    - Problems related to credentialing, particularly in the case of hospital-based programs due to the current emphasis on academic credentials

The study focuses on "allied health manpower," rather than specific occupational groups, seeking to identify and assess problems which are common to many allied health occupations.

(2) Expert Opinion Has Been Used To Validate Study Conclusions and Recommendations

Given the constraints imposed by time, dollars, and the difficulty of obtaining comprehensive and organized information pertaining to clinical education, data gathering was not emphasized in this study. A subjective study, relying on the opinion of highly qualified individuals, was selected as the most effective design to achieve the study objectives of clearly defining the problems involving clinical education and means to alleviate the problems identified.

The study design provided for establishment of a national task force to advise the contractor, comprised of selected representatives of the several key constituencies in the study:

- Educational institutions
- Health care agencies
- Government

In addition, special subcommittees were established in a number of major substantive areas to advise on these important areas.

The investigation by the study team included interviews of a broad range of knowledgeable persons who are involved directly or indirectly with clinical education. Participation was thus provided for persons involved in the operation of programs as well as those with subject matter expertise, representatives of allied health professional associations, administrators of allied health schools, and researchers in the field.

Appendix A provides a more detailed description of the study methodology.

2. CLINICAL EDUCATION, THE PRIMARY FOCUS OF THIS STUDY, IS A CRUCIAL COMPONENT OF THE ALLIED HEALTH EDUCATIONAL CONTINUUM

In general terms, education is composed of a sequence of relatively formalized learning experiences by which individuals acquire knowledge and skills. The degree of formalism and structure which characterize these experiences may differ depending on type, level, and purpose of the educational program. The progression of educational experiences can be regarded as a continuum upon which we may locate different points in terms of time and of achievement of the knowledge, skills, attitudes, and judgments to be developed. The constituent educational experiences may and do vary.

Allied health workers develop and maintain required knowledge, skills, attitudes, and judgments in a variety of ways. Generally, the sequence of education for allied health workers consists of some combination of the following types of learning experiences:

- Basic occupational preparation through which individuals develop the knowledge, skills, and attitudes which they must have to enter the health care system at a particular level. These levels, which generally correspond to educational level or duration of the preparatory program, are usually as follows:
  - Assistant/aide--one year/certificate
  - Technician/assistant--two years/associate degree
  - Technologist/therapist--four years/bachelor's degree
- Inservice education through which employees of a particular health care agency can learn the specific practices and procedures of the employing organization.
- On-the-job training through which employees develop, in a work-oriented context, the basic knowledge, skills, and attitudes needed to perform in a particular job and organization.
- Continuing education through which practitioners can update or augment the knowledge, skills, and attitudes necessary for current job performance, specialization, or advancement.

The educational continuum which prepares allied health workers was diagrammed in order to assist the considerations of the task force and staff for this study. Clinical education was identified as a discrete component, as shown graphically in Exhibit I, following this page. Inservice education is explicitly included. Informal continuing education is implied. This structure reflects the study emphasis on formalized educational preparation but recognizes the necessity, and contribution, of other learning experiences.

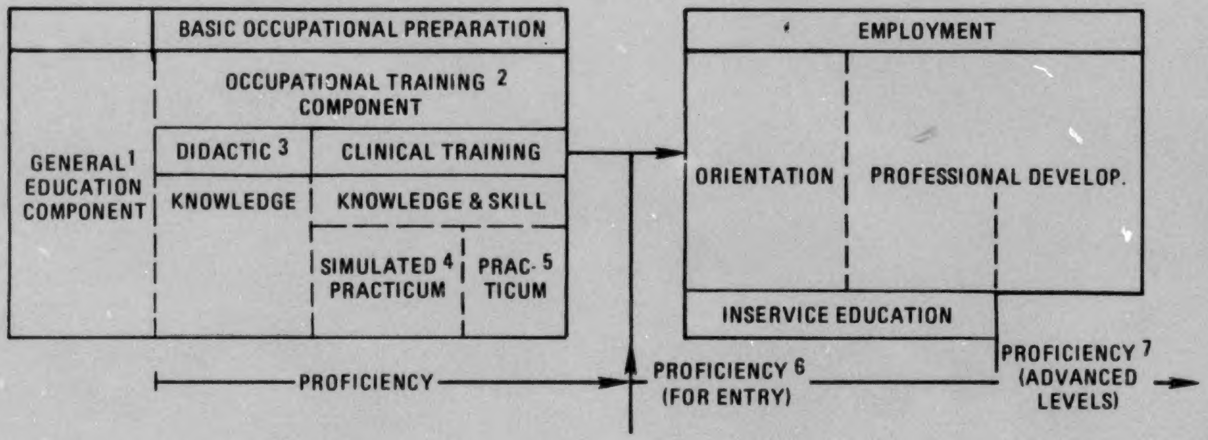
Employment is shown in the continuum as an end point of formal basic occupational preparation, but also as a source of further essential learning experiences.

As illustrated in Exhibit I, following this page, proficiency is shown as a continuum, since capabilities can be developed through informal as well as formal learning and there can and should be individual variation in progress along the continuum. Proficiency, of course, is a broad concept which has specific meaning only in the given job situation where standards and requirements can be defined and satisfactory performance recognized.

The proficiency at graduation (educator's target) should not equal the proficiency which the employer expects the rank and file on that job (his particular version of that job) to have. Rather, the employer should expect to have to supplement the basic occupational preparation in order to raise "graduating proficiency" (proficiency at entry into employment, held in common by all students in that type of program, regardless of the job they will get)

EXHIBIT I

EDUCATION-EMPLOYMENT CONTINUUM FOR ALLIED HEALTH PRACTITIONERS


BASIC OCCUPATIONAL PREPARATION
GENERAL[1] EDUCATION COMPONENT
OCCUPATIONAL TRAINING[2] COMPONENT
DIDACTIC[3]
CLINICAL TRAINING
KNOWLEDGE
KNOWLEDGE & SKILL
SIMULATED[4] PRACTICUM
PRAC-[5] TICUM
EMPLOYMENT
ORIENTATION
PROFESSIONAL DEVELOP.
INSERVICE EDUCATION
PROFICIENCY
PROFICIENCY[6] (FOR ENTRY)
PROFICIENCY[7] (ADVANCED LEVELS)

[1] General Education Component: In a collegiate program, academic course work which does not lead to specifiable occupational competencies. Includes subjects such as English, mathematics, introductory courses in the physical and life sciences, and electives, whether prerequisites for occupational training or not.

[2] Occupational Training Component: Studies and practice which lead to the specifically required competencies for the occupation. The courses included are, if not unique to this occupation, in common only with related occupations.

[3] Didactic: That portion of occupational training which is teachable in conventional educational settings.

[4] Simulated Practicum: A learning experience consisting of study and simulated practical work; conducted in an educational (non-working) setting.

[5] Practicum: A learning experience consisting of study and actual practical work, conducted in a work setting.

[6] Proficiency (Entry level): That level of competency which the educational process produces based upon standards set by the educational program.

[7] Proficiency (Advanced levels): Good ability as defined to function within the occupation, including the ability to function with minimal supervision, without hazard, with humaneness, and with efficiency.

to "proficiency of the rank and file who are successful in the entry level job." To do this, he must expect and plan to provide additional training, either formal or informal.

As shown in Exhibit I, clinical education consists of study and both simulated and actual practical work. Simulation is conducted in an educational or nonwork setting, while the actual practice is conducted in a real-work setting. It should be emphasized that both simulation and actual practice are considered formal educational experiences.*

It may be helpful to provide one further distinction between the didactic and the clinical phases, as follows:

- Didactic--Student learning of specialized content by means of lecture, seminar, demonstration, or laboratory exercises
- Clinical--Student learning of specialized content in a simulated health care setting or a real setting in which health care or services are being rendered

In summary, the focus of this study is on those structured learning experiences which are:

- Typically provided within an operational health care setting

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*However, there is a general tendency to view the actual practice phase as a nonacademic experience and then to treat it (and evaluate it) less rigorously than the didactic and simulated phases.

- Implemented through the observation and/or performance under supervision of occupational functions within an operational health care setting

- Related to and part of the specialized education provided in the occupational preparation of allied health practitioners

3. IN PRINCIPLE, THE TASK FORCE ENDORSES THE ESSENTIAL NATURE OF THE PRACTICUM IN CLINICAL EDUCATION, BUT ALSO MAINTAINS THAT THE PRACTICUM SHOULD BE KEPT TO THE MINIMUM NECESSARY TO ATTAIN THE REQUIRED COMPETENCY

During its early deliberations, the task force and its subcommittees developed this statement of assumptions and philosophical perspective which undergirded its deliberations.

Certain assumptions and principles emerged in the discussions of the task force which constitute a de facto philosophical stance with respect to the form and function of clinical education for the allied health professions and occupations. They are summarized in this preamble to provide the "frame" within which the body of later considerations is addressed.

These assumptions and principles are offered as bases for discussion and not as a set of imperatives. They constitute a background which the task force believes will lead to constructive decisions. The members are convinced that the work of the task force will not be fruitful without some agreement on philosophical premises.

To begin with, the task force accepts the operational definitions established for clinical education.* The didactic component and the practicum are seen as two modes for enabling the student to gain clinical knowledge and skill.

The end point of clinical education should be a specified degree of competence, namely the capacity to enter a specified level of an occupation and to perform at that specified level in a (necessarily) minimal fashion, but with safety and effectiveness and in a humanitarian way.

The task force believes that a practicum period of some duration, during which the student performs real work in a patient care setting, is an essential part of clinical education. This requirement should be reflected in the development of content and curricula for clinical education. Nevertheless, employers should recognize that a new practitioner will not be able to perform all the functions required by an institution. Rather, he will be prepared for performance of basic functions with decreasing supervision and for further development of his clinical skills and growth.

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*Definitions for clinical education are included in Chapter I and Appendix D.

Completion of a basic occupational education program is established as that point at which the sponsoring educational institution is willing to assert that the student has demonstrated his capability to perform specified clinical functions safely and humanely. In effect, this is a form of certification and should be based on demonstrated competence and/or proficiency. A student's level of education, degrees attained, and courses taken are merely indicators of exposure to potentially useful content. Demonstration of varying kinds of proficiency remains the final test of whether or not a given health worker has attained the level that must be required for him to assume any clinical responsibility.

Continuing education, in which clinical training also has a part, should have as its objective the maintenance of competency as it is currently defined. It should include restoration, when necessary, of the individual's initial level of competence as well as any upgrading made necessary by new advances in knowledge and skills which have occurred in the particular field or area of specialization. In addition, continuing education will ideally include courses to permit upward and lateral growth of the health worker.

Content, therefore, at all levels of clinical education, including continuing education, can be defined in terms of the knowledge, skills, and attitudes needed to enable a practitioner to perform at a specified and required level of proficiency. To ascertain content in these terms, it is necessary to perform different types of analyses, including:

- Tasks actually being done in the operational setting by the specified occupation and level
- Tasks which should and could be done by that occupation

The qualifications for each occupation and level are then defined in terms congruent with the functions and tasks which are generally performed by that occupation. These qualifications must first be expressed in terms of specific knowledge and skills to be attained and later can be framed in more general terms.

The task force believes that the function of the educational institution which sponsors an educational program should be to provide the minimum base of content required to enable the student to achieve sufficient competence to enter a specified occupation. The task force recognizes that the jobs which can be done within an occupation are many and varied, according to the type of employer, the geographical setting, and many other factors. The sponsoring institution neither can nor should attempt to prepare the student for all these eventualities or for every level of performance which he might conceivably attain.

The task force further believes that there is a real distinction, although not currently as sharply defined as we would wish, between education for competency as an employee in the health care system and education of the student in areas felt to be important for future occupational or personal development. Content elements directed toward the latter, more general requirements of education are in no way derogated. They are properly the concern of the educational institution and the student and should be determined between them. They should not be confused, however, with the content required to meet the minimal standard of performance which the employer and the public have a right to expect.

If these principles and distinctions are accepted, they underscore the necessity for the closest integration of the efforts of educational institutions and employers in a reciprocally advantageous relationship, heretofore rarely observed. We are cognizant of both the tensions and the opportunities inherent in this new relationship. Nonetheless, we deem its development as essential.

These principles also make it clear that the practicum, that portion of the curriculum taught in the operational setting, including direct patient contact, should be kept to the minimum that is necessary to attain competency as defined above. Thus, the simulated clinical encounter should be used more extensively than is now the case. Actual direct patient contact in the operational clinical setting can be used to supplement and complement the content the student has gained through simulated clinical situations. This provides the educational institution with a larger measure of control over the development of basic competencies required for job entry.

The point of view espoused here consciously fits the content of basic occupational preparation to a set of specifications which are requirements for a certain level of competence and performance and which are determined in as rigorous and objective a fashion as possible. The duration of training, courses, and degree requirements become less important than performance criteria at all levels of education--or, at least, they become means rather than ends in themselves.

* * * *

The nature of clinical education and complex relationships between general and clinical education raise a variety of fundamental issues common to all allied health occupations. Subsequent chapters of the report deal with areas of major concern, discuss major issues, and suggest possible approaches for resolution of critical problems.

Several appendixes are also included as part of this report. Appendixes A, B, and C provide a detailed description of the study approach and the methods utilized in deriving findings and conclusions. A glossary of terms used in this report is included as Appendix D. Appendix E contains position statements from selected major health, educational, and professional organizations regarding credentialing in allied health.

SUMMARY OF RECOMMENDATIONS

This report represents a concerted effort to assess the current "state of the art" in the clinical education of allied health manpower. The study which has been conducted reveals that clinical education as conducted today is beset with many problems.

The most basic problem arises from the fact that the purposes and objectives of clinical education are not well defined nor understood by those individuals most directly involved, either on the academic side or the clinical side. Most health professionals believe that some period of performing in an actual patient care setting is an essential phase in the education of health manpower. However, this practicum or clinical education phase lacks definition as to specific objectives to be achieved and the educational content by which to achieve those objectives.

The way in which clinical education is conducted represents major problems. The trend in the basic occupational preparation of allied health manpower has been to provide the academic phase in an educational institution and the clinical education phase in a health care agency or institution. The separation of these two phases has made the management of a total education program more difficult because of the increasing complexity of coordinating and controlling the clinical phase.

Resources in terms of clinical education space, faculty, equipment, and educational software are generally in short supply. Dollars to support clinical education have been generally insufficient.

As the nation's health system continues to expand, more clinical education spaces are required for allied health manpower. At the same time, the pressures for more formal and thorough basic education place still more demands on clinical education resources. In addition, the demands for continuing education to maintain proficiency will increase and must in large part be met by efforts of health care institutions. They are thus faced with additional clinical education burdens at a time when rising costs and strictures on the use of patient care income force them to contemplate decreasing, rather than increasing, their investments in education.

One solution, stressed in this report, is to remove from the the clinical setting all of that education that can be successfully carried out elsewhere. The "simulated clinical experience" in the "class laboratory" is universally regarded as having great promise. Other recommendations here, if adopted, should result in more effective (and hence shorter) clinical practicum, with less drain on health care resources.

These remedies alone will not be enough. A new pattern of responsibility, funding, and technical assistance for the clinical component of academic educational programs must emerge, in which the burden of providing resources and assuring quality of training falls in increasing measure on the sponsoring institution. Few schools recognize the inevitability of this. Those that do are ill-prepared to act.

The view that all formal basic occupational training of allied health manpower should be conducted in or through academic institutions is prevalent, but in our opinion, not correct or constructive. Nonacademic pathways to health careers are of obvious utility. More importantly, it would be unwise for an industry with such complex manpower demands to completely divest itself of control over the manpower production function. Nonacademic programs, controlled by and responsive to the specific needs of employers (as they are embodied in the health care institution) will, as long as they exist, provide a flexible, adaptive mechanism for meeting needs for specific skills.

The major recommendations which are presented in this report are summarized in the following pages.

CHAPTER III CONTENT OF CLINICAL EDUCATION

1. EFFORTS TO IMPROVE CLINICAL EDUCATION SHOULD BE INTENSIFIED

2. MAJOR EFFORT SHOULD BE DIRECTED TOWARD BETTER DEFINITION OF OBJECTIVES AND COMPETENCIES, BASED ON SYSTEMATIC ANALYSIS OF JOB ACTIVITIES

   (1) Structured Analysis To Determine the Essential Elements of Work Activities Should Be Undertaken

   (2) Educational Objectives Should Be Written Based on Job Analysis Results

   (3) Objectives Developed at the National Level Should Distinguish Between Entry-Level Competence and Increasing Proficiency

   (4) Objectives and Competencies Should Be Defined by Occupational Level and Should Recognize Different Roles

   (5) National Professional Associations Should Write Broad Statements of Clinical Education Objectives With Input From Other Sources

3. CONTENT SHOULD BE BASED ON OBJECTIVES, NOT SUBSTITUTED FOR THEM

4. IMMEDIATE IMPROVEMENTS IN THE EFFECTIVENESS OF CONTINUING EDUCATION PROGRAMS SHOULD BE GIVEN HIGH PRIORITY

   (1) Professional Associations and Educational Institutions Should Recognize Their Responsibilities To Support Continuing Clinical Education

   (2) Employers Should Recognize Their Obligations To Facilitate and Participate in Employee Development

CHAPTER IV CREDENTIALING IN CLINICAL EDUCATION

1. ACCREDITATION STANDARDS SHOULD BE DIRECTLY AND EXPLICITLY RELATED TO ACCEPTED CLINICAL EDUCATION OBJECTIVES

2. SYSTEMATIC METHODS FOR EVALUATING THE ACHIEVEMENT OF RELEVANT INDIVIDUAL COMPETENCY SHOULD BE DEVELOPED

3. CREDENTIALING MECHANISMS SHOULD BE MORE RESPONSIVE TO CHANGES IN HEALTH AND TECHNOLOGY

    (1) Professional Associations Should Continue To Reassess the Credentialing Mechanisms With Which They Are Involved

    (2) The Goals of Certification and Licensure Should Be Fully Integrated With Those for Accreditation, Lest Clinical Education Be Forced To Serve Multiple Masters

    (3) Means Should Be Established for the Participation of Related Practitioners and Other Parties in Credentialing

4. SPECIALIZED ACCREDITATION SHOULD DIRECT MORE ATTENTION TO CLINICAL EDUCATION

    (1) Clinical Education Should Be Emphasized in Accreditation Standards and Guidelines

    (2) Accreditation Requirements Should Be Revised Where Necessary To Permit and Encourage Maximum Integration of Didactic and Clinical Education

CHAPTER IV CREDENTIALING IN CLINICAL EDUCATION (Continued)

(3) Clinical Education Should Be Given Greater Emphasis in Accreditation Site Visits

(4) Provisions by Professional Associations for Clinical Education Consultation Should Be Reinforced Substantially

CHAPTER V THE MANAGEMENT OF CLINICAL EDUCATION

1. PROVISION FOR CLINICAL EDUCATION SHOULD BE A MAJOR ELEMENT IN PLANNING AN ALLIED HEALTH EDUCATION PROGRAM

2. OBJECTIVES FOR CLINICAL EDUCATION SHOULD BE CLEARLY ESTABLISHED

3. PUBLIC ACCOUNTABILITY FOR THE CLINICAL EDUCATION COMPONENT SHOULD BE ACCEPTED BY THE SPONSORING INSTITUTION

4. FINAL DECISION-MAKING AUTHORITY IN THE MANAGEMENT OF THE CLINICAL EDUCATION COMPONENT SHOULD BE EXERCISED BY THE SPONSORING INSTITUTION

5. AFFILIATIONS SHOULD BE BASED ON A FORMAL AGREEMENT

6. THE SPONSORING INSTITUTION SHOULD MAINTAIN CONTINUING AND EFFECTIVE COMMUNICATION WITH ANY AFFILIATING HEALTH CARE INSTITUTION

CHAPTER VI REQUIREMENTS FOR HUMAN AND PHYSICAL RESOURCES

1. ADDITIONAL TYPES OF HEALTH CARE AGENCIES SHOULD BE INVOLVED IN CLINICAL EDUCATION

   (1) Allied Health Programs Should Develop a Strategy To Sell Health Care Agencies on Participating in Clinical Education

   (2) A Greater Variety of Agencies Should Be Involved in Allied Health Clinical Education

   (3) Special Purpose Affiliations Should Be Arranged With Clear-Cut Division of Responsibility

2. EDUCATIONAL INSTITUTIONS SHOULD COOPERATE WITH HEALTH CARE AGENCIES IN ACHIEVING MORE EFFICIENT USE OF EXISTING CLINICAL CAPACITY

   (1) Scheduling of Clinical Allied Health Programs and Clinical Affiliations Should Be Coordinated on a Regional Basis

   (2) More Efficient and Effective Timing of Clinical Experience Should Be Arranged

3. ACTIONS SHOULD BE TAKEN TO STRENGTHEN THE CLINICAL EDUCATION FUNCTION IN HEALTH CARE AGENCIES

   (1) Affiliation Should Be Made a Reciprocal Arrangement To Maximize Utilization of Clinical Resources

   (2) Educational Agencies Should Tailor Instruction to Agency Capabilities

   (3) Health Care Agencies Should Coordinate Their Resources for Clinical Education

   (4) Private and Public Support Should Be Provided for Development of Clinical Education Institutions

4. CONCENTRATED EFFORTS SHOULD BE MADE TO DEVELOP CLINICAL STAFF POTENTIAL FOR EDUCATION

  (1) Health Care Agencies Should Staff To Provide Instruction

  (2) The Contributions of Role Models to Clinical Education Should Be Explicitly Identified and Recognized

  (3) Educational Institutions and Professional Associations Should Expand Efforts To Develop Clinical Instructional Skills

  (4) Opportunities and Incentives for Development of Individual Instructional Capabilities Should Be Carefully Designed

  (5) Formal Programs for Instructor Development Should Be Based on Analysis of Present and Future Requirements

5. EDUCATIONAL INSTITUTIONS SHOULD EXPAND THEIR RESOURCES TO SUPPORT CLINICAL EDUCATION

  (1) Educational Institutions Should Improve Provisions To Ensure Capable Faculty for Clinical Education

  (2) Capabilities To Provide Simulated Clinical Situations Should Be Strengthened

  (3) Health Care Agencies Should Assist Educational Agencies in Improving Their Clinical Education Resources

CHAPTER VI REQUIREMENTS FOR HUMAN AND PHYSICAL RESOURCES (Continued)

6. ACTIVITIES TO SUPPORT INCREASED DEVELOPMENT AND USE OF INSTRUCTIONAL AIDS AND EQUIPMENT SHOULD BE EXPANDED

   (1) Greater Attention Should Be Given to Instructional Materials for Use in Health Care Agencies

   (2) Instructional Aids and Equipment To Support Both Initial and Continuing Education Should Receive Priority

7. ALTERNATIVE PATTERNS OF HEALTH CARE AGENCY INVOLVEMENT IN CLINICAL EDUCATION SHOULD BE EXPLORED

CHAPTER VII STUDENTS AND CLINICAL EDUCATION

1. THE STUDENT'S ROLE IN CLINICAL EDUCATION SHOULD BE ARTICULATED BASED ON EDUCATIONAL OBJECTIVES

2. GREATER EFFORT SHOULD BE MADE TO IMPROVE THE QUALITY OF AVAILABLE INFORMATION ON CLINICAL EDUCATION

3. ALTERNATIVE MECHANISMS FOR STUDENT FINANCING OF SPECIAL CLINICAL EXPENSES SHOULD RECOGNIZE INDIVIDUAL, HEALTH CARE, AND SOCIAL NEEDS

4. STUDENT SCREENING AND SELECTION SHOULD EMPHASIZE INDIVIDUAL CAPABILITIES FOR CLINICAL EDUCATION AND THE NEED FOR CLINICAL EXPOSURE

5. SPECIALIZED ADMISSION COUNSELING AND DEVELOPMENTAL ALTERNATIVES SHOULD BE AVAILABLE TO ALL STUDENTS

CHAPTER VII STUDENTS AND CLINICAL EDUCATION (Continued)

6. EDUCATIONAL INSTITUTIONS AND HEALTH CARE AGENCIES SHOULD GIVE GREATER RECOGNITION TO THE LEARNING EXPERIENCES THE OTHER PROVIDES

7. EDUCATION PROGRAMS SHOULD ASSUME RESPONSIBILITY FOR PROVIDING FOR AND ASSIGNING STUDENTS TO CLINICAL SITES

8. GUIDANCE SHOULD BE FORMALIZED AS AN INTEGRAL COMPONENT OF CLINICAL EDUCATION TO ENSURE RESPONSIVE COUNSELING AND EVALUATION

9. ALLIED HEALTH PROGRAMS SHOULD ASSIST THEIR GRADUATES IN FINDING EMPLOYMENT

CHAPTER VIII FINANCING CLINICAL EDUCATION

1. A BASIC, MUTUALLY ACCEPTABLE RATIONALE SHOULD BE DEVELOPED TO DISTINGUISH SERVICE AND NET EDUCATIONAL COSTS OF CLINICAL EDUCATION

    (1) A Methodology for Determining Net Educational Costs Should Be Adopted

    (2) Methods for Determining Generic Cost Elements in Clinical Education Should Be Refined and Extended

    (3) Major Efforts Should Be Directed at Developing Methodologies for Identifying the Value of Services

    (4) Detailed Major Studies To Develop Standard Cost Data by Occupation Should Receive High Priority

2. FINANCING NET EDUCATIONAL COSTS SHOULD BE BASED ON GENERAL PUBLIC POLICY TOWARD FINANCING POSTSECONDARY EDUCATION

3. THE PROGRAM SPONSOR SHOULD BE RESPONSIBLE FOR THE NET EDUCATIONAL COSTS OF CLINICAL EDUCATION

4. HEALTH CARE AGENCIES SHOULD BE RESPONSIBLE FOR FINANCING THAT PORTION OF CLINICAL EDUCATION WHICH RENDERS SERVICES OF VALUE

* * * *

High quality health care depends on well educated and trained health manpower. The conclusion is inescapable: the quality of clinical education must be improved, and the financial support required must be made available with government providing the major share.

I. INTRODUCTION

At the present time, there are more than 4 million people representing approximately 200 identifiable health related occupations employed in the nation's health care industry. The magnitude of allied health manpower in relation to other elements of the health care system is exemplified by the fact that today an estimated 10 of every 11 health care workers are nonphysicians, as compared to 1900 when only 2 of 3 were nonphysicians. These practitioners perform functions that are vital to the support of physicians and to the provision of discrete health care services. Effective and efficient preparation of allied health manpower is becoming an increasingly critical factor in improving the quantity and quality of the health care the public receives.

This introduction briefly reviews the development of education for allied health manpower, the present status of manpower requirements, the nature of clinical education, and the rationale leading to a national assessment of clinical education. The chapter also sets out the objectives and scope of work and provides a general perspective for the remainder of the report.

1. ALLIED HEALTH MANPOWER, WHICH HAS EVOLVED INTO A CRITICAL COMPONENT OF THE NATION'S HEALTH CARE LABOR FORCE, WILL REMAIN IN SHORT SUPPLY

The role of the early allied health worker was generally determined by the physician with whom he worked. He was usually trained to perform specific tasks and jobs that the physician either had too little time to perform or preferred not to do himself. Job mobility for the allied health worker was fairly limited, being directly dependent upon the physician. Nonetheless, the early allied health worker made a significant contribution to health care delivery by enabling the physician to see more patients, by disseminating information and principles of good health to the general population, and by setting the stage for the development of a wide range of allied health occupations.

Today, allied health manpower is comprised of a broad range of occupations, each playing a significant role in the total health care spectrum.*

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*This study has been largely confined to an examination of the allied health occupations (excluding dental, nursing, mental health, and environmental health disciplines).

(1) Allied Health Manpower Comprises a Significant Segment of the Total Health Work Force

The National Center for Health Statistics has estimated that about 500,000 workers are active in the medical-allied occupations of interest to the study (see Exhibit II, following this page). This group represents 12-1/2% of the nation's health work force of over 4 million people, which is expected to grow to 6.5 million by 1980.

Factors contributing to the increased demand for health services and health manpower include:

- Increasing population
- Growing public awareness of the vast potential benefits represented by medical science and technology and the general belief that all Americans have a right to such care
- An increase in health care dollars, which enables more people to purchase health services
- Wider insurance coverage, including government programs such as Medicare and Medicaid
- Advancing technology, which generates a need for researchers, specialists, and manpower for new fields of medicine
- Rising standards for personal health services

These factors strongly suggest that the requirements for qualified manpower will continue to exceed supply and

EXHIBIT II

ESTIMATED NUMBER OF PERSONS EMPLOYED WITHIN SELECTED ALLIED HEALTH OCCUPATIONS, 1971

Occupation	Active Workers
Clinical (Medical) Laboratory Technologist	78,000
Clinical Laboratory Technician and Assistant	67,000
Dietitian and Nutritionist	30,000
Dietary Technician, Food Service Supervisor	7,000
Medical Record Administrator	11,500
Medical Record Technician	43,000
Occupational Therapist	7,500
Occupational Therapy Technician and Assistant	5,500 to 6,500
Optometric Assistant	5,000
Optometric Technician	800 to 1,000
Orthotist/Prosthetist	3,600
Physical Therapist	15,000
Physical Therapy Technician and Assistant	9,000
Radiologic Technologist, Technician, and Assistant	75,000 to 100,000
Corrective Therapist	1,200
Educational Therapist	500
Manual Arts Therapist	900
Music Therapist	2,200
Therapeutic Recreational Specialist	6,000
Speech Pathologist and Audiologist	20,000 to 24,000
Electrocardiograph Technician	9,500
Electroencephalograph Technician	3,300 to 3,500
Respiratory Therapy Technician	11,000 to 12,000
Ambulance Attendant	5,600
Ophthalmic Assistant	15,000 to 20,000
Total	433,100 to 509,900

Source: National Center for Health Statistics, Health Resources Statistics 1972-73, U. S. Department of Health, Education, and Welfare.

that for many of these occupations more thorough and careful preparation will be needed.

(2) It Is Difficult To Project Requirements for AHM Given Current Data

Whether or not educational programs for allied health manpower are now producing enough workers is uncertain. These programs have greatly expanded in recent years, but as this report is written no current data on the numbers of graduates are available. In some occupations, there are clearly not enough qualified workers for present needs; any national health insurance program which increases the demand for health services will undoubtedly bring additional requirements for manpower. The extent of future shortages in this field cannot be predicted with any degree of confidence, however, due to a lack of standards on which to base any theoretical calculation of the types and numbers of individuals that are required to provide "adequate" care.

In spite of the uncertainties involved, it seems reasonable to expect that the total numbers of students in allied-medical education programs will continue to rise, although at a slower rate than has been experienced in the last five years. There will be a concomitant increased demand for clinical training resources, quite apart from any demands associated with better quality of instructions.

2. A DEFINITE TREND TO IMPROVE ALLIED HEALTH MANPOWER EDUCATION HAS DEVELOPED DURING THE PAST 20 YEARS

Following World War II, enormous advances in medical science, technology, and organization created urgent demands for significantly greater numbers of specialized and well-trained allied health personnel. Formalization of the training processes for a variety of health care occupations became mandatory. Thus, allied health education programs proliferated in both health care and educational institutions in response to these demands.

(1) Hospitals Became the Early Locus of Training for Allied Health Occupations

The mandate for formalized training in the allied health occupations resulted in the institutionalization of such education programs in hospitals. Until recently, hospitals generally accepted responsibility for both the didactic and practicum elements of health occupation training. Hospitals had been involved in nurse training since shortly after the turn of the century and, thus, were not unaware of the requirements for educational programs. Moreover, most programs initially followed the "apprenticeship model" and were most easily accomplished within the hospital setting.

As the separate, identifiable allied health occupations proliferated, each became (and continues to become) more specialized and "professionalized," seeking expanded educational preparation. Thus, higher levels of academic preparation were accepted as essential to the preparation of allied health manpower. Many hospital-based programs evolved to resemble the "medical model," i.e., to require certain minimum college-level prerequisites in both general and specialized academic disciplines prior to entry into the hospital-sponsored program for specific occupational training.

(2) Recent Trends Suggest an Increasing Role for Educational Institutions and a Declining Role for Health Care Institutions

The number of allied health education programs has increased markedly in recent years, as previously noted. It is important to point out that these programs have increased in number rather than in size. Individual allied health education programs are still characterized, for the most part, by small enrollments.* Factors contributing to this typically small enrollment per program are discussed in detail in later chapters.

Although the largest number of allied health education programs remain hospital based, the number of programs in institutions of higher education are rapidly expanding.

1. Senior Colleges and Universities Have Significantly Increased Their Role in Allied Health Education in Recent Years

In response to increased manpower needs and higher educational requirements, senior college programs to prepare allied health workers have increased from 1,018 in 1968 to 1,510 in 1971, supplying 13,000 graduates, as shown in Exhibit III, following this page. This represented an increase of almost 50% in the number of programs. During this same period, the number of occupational categories represented increased from 31 to 40 (exclusive of nursing, mental health, and dental occupations). An additional 800 basic occupational education programs are estimated by 1975. Growth of senior college and university programs over a four-year period is shown in Exhibit III.

2. Junior and Community Colleges Are Playing an Increasingly Important Role and Plan for a Greatly Expanded Role

Rapid growth of junior and community colleges, with their emphasis on occupational training, has contributed even more to the expanding role of educational institutions in allied health education. In 1970, junior

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*Programs considered in the present study have an average enrollment of about six students per year, as shown by Exhibit III and Exhibit IV.

EXHIBIT III (1)

GROWTH IN ALLIED HEALTH PROGRAMS IN SENIOR COLLEGES AND UNIVERSITIES

(Excludes Graduate Level Programs)

Program	1967-68 Programs	1967-68 Graduates	1968-69 Programs	1968-69 Graduates	1969-70 Programs	1969-70 Graduates	1970-71 Total Number of Programs
Health Services Administrator	3	13	4	45	5	37	8
Hospital Unit Manager	1	6	2	8	2	7	3
Medical Office Assistant	6	83	6	72	8	109	10
Medical Records Librarian	21	135	23	173	27	196	43
Medical Records Technician	1	0	1	0	2	2	4
Biomedical Engineer	7	26	7	37	10	50	13
Cardiopulmonary Technologist/Respiratory Therapist	0	0	0	0	0	0	1
Circulation Technologist	0	0	0	0	0	0	2
Electroencephalographic Technician	1	3	1	3	2	7	2
Inhalation Therapist	4	18	13	73	16	130	28
Dietary Technician	3	23	4	33	5	29	10
Dietitian/Nutritionist	134	973	151	1,149	161	1,218	176
Bloodbanking Technologist	3	10	4	15	4	16	5
Cytotechnologist	28	190	32	183	32	179	38
Histology Technician	7	23	7	18	8	22	8
Laboratory Clinician	9	60	9	82	12	89	19
Medical Laboratory Assistant	5	115	5	122	6	130	6
Medical Laboratory Technician	2	23	2	19	5	26	8
Medical Technologist	405	2,920	434	3,289	476	3,710	552
Obstetric Technician	0	0	0	0	0	0	1
Vision Care Technician	2	10	2	15	2	8	3
Medical Radiation Specialist	2	13	3	21	3	13	3
Nuclear Medicine Technician	0	0	2	2	2	3	2
Nuclear Medicine Technologist	3	5	5	28	7	28	9
Radiologic Administrator/Educator	1	9	1	4	1	8	3
Radiologic Technician	36	620	42	661	46	779	55
Radiologic Technologist	5	15	9	24	11	31	23
Radiopharmacist	0	0	0	0	1	12	1
Art, Corrective, Music, Recreation, and Manual Arts Therapists	21	90	26	147	32	168	43
Exercise Physiologist	1	2	2	3	3	46	4

	1967-68		1968-69		1969-70		1970-71
Program	Programs	Graduates	Programs	Graduates	Programs	Graduates	Total Number of Programs
Occupational Therapist	35	553	37	593	44	692	51
Occupational Therapy Assistant	0	0	0	0	1	2	2
Orthotist/Prosthetist	3	30	3	35	3	23	4
Physical Therapist	55	992	59	1,204	68	1,318	87
Physical Therapy Assistant	0	0	0	0	0	0	2
Speech Pathologist/Audiologist	107	1,002	117	1,316	127	1,529	138
Speech Pathologist/Audiologist (Premasters)	106	1,750	110	1,925	123	2,325	138
Allied Health Professions Educator	1	8	1	5	1	17	1
Laboratory Animal Technologist	0	0	0	0	0	0	3

Source: Association of Schools of Allied Health Professions, Allied Health Education Programs in Senior Colleges/1971; U.S. Department of Health, Education, and Welfare.

and community colleges sponsored 632 programs and graduated nearly 3,800 students. Within a year, the number of graduates from these colleges had jumped to over 6,000. These statistics, as shown in Exhibit IV, following this page, are indicative of the growing role played by one- and two-year programs in junior and community colleges. By 1975, 499 additional programs, including additional occupational specialties, are planned.

3. Hospital-Based Education Programs Continue To Represent a Significant Proportion of Allied Health Education Programs

Educational programs sponsored by hospitals or other providers represented about 85% of the total number of allied health education programs accredited by the American Medical Association in 1971, as shown in Exhibit V, following Exhibit IV. Notably, however, programs sponsored by health care agencies accounted for only 46% of the programs other than for laboratory assistants, medical technologists, and radiologic technologists.

Although data are limited regarding numbers of other hospital-sponsored programs, they remain a significant proportion of all programs. Most importantly, regardless of the sponsoring agency, hospitals and other health care agencies will probably continue to provide the clinical environment for most programs.

Thus, a very real shift in the locus of allied health training sponsorship from the hospital to the educational institution is underway. Several factors contribute to this shift in sponsorship. Among them are:

- Growing interest and acceptance of responsibilities by colleges for "occupational" education
- The rapid growth in numbers of community and junior colleges and their attendant focus on "occupational" education

EXHIBIT IV

PROGRAMS IN ALLIED HEALTH EDUCATION IN JUNIOR AND COMMUNITY COLLEGES

Program	Number of Programs 1970	Number of Graduates 1969-70	Number of Graduates 1970-71 (Est.)
Health Administrative Assistant	7	3	19
Nursing Home Administrator	5	2	71
Biomedical Engineering Technician	5	21	28
EEG Technician	1	0	0
Medical Emergency Technician	1	6	8
Radiological Health Technician	1	5	5
Cytotechnologist	1	19	8
Histology/Cytology Technician	1	0	1
Medical Laboratory Assistant	22	200	254
Medical Laboratory Technician	97	687	1,086
Medical Technologist	2	12	17
Inhalation Therapist	87	327	763
Medical Office Assistant	104	1,274	1,485
Medical Record Technician	44	165	329
Dietary Technician	9	54	81
Surgical Technician	39	192	499
Vision Care Technician	5	26	20
Nuclear Medicine Technician	6	12	33
Radiation Therapy Technician	2	0	6
Radiologic Technician	97	496	972
Occupational Therapy Assistant	21	171	284
Physical/Occupational Therapy Assistant	2	6	15
Physical Therapy Assistant	19	71	169
Prosthetic/Orthotic Technician	3	12	16
Recreational Therapy Technician	1	0	0
Total	632	3,761	6,169

Source: American Association of Junior Colleges, Allied Health Education Programs in Junior Colleges/1970; U.S. Department of Health, Education, and Welfare.

EXHIBIT V

INSTITUTIONAL LOCATIONS OF AMA-ACCREDITED PROGRAMS IN ALLIED HEALTH EDUCATION, 1971

Program	Hospitals and Laboratories	Postsecondary Institutions Through Two Years	Colleges and Universities	Total Programs
Certified Laboratory Assistant	159	45	8	212
Cytotechnology	90	0	27	117
Histologic Technician	0	0	0	0
Inhalation Therapy	52	17	13	82
Medical Assistant	0	11	1	12
Medical Record Librarian	7	0	18	25
Medical Record Technician	4	23	2	29
Medical Technologist	724	0	49	773
Nuclear Medicine Technologist and Technician	11	1	5	17
Occupational Therapy	0	0	36	36
Orthopedic Physician's Assistant	0	3	1	4
Physical Therapy	2	0	48	50
Radiation Therapy Technologist	13	0	3	16
Radiologic Technologist	1,075	40	31	1,146
Total	2,136	140	242	2,519

Source: Data supplied by AMA, Department of Allied Medical Professions and Services.

- Growing "professionalization" of many allied health occupations, which in turn requires additional academic background and credentials
- Greater student demands for general education and academic credit, thus increasing educational and/or career mobility
- Growing pressures on hospitals for cost containment and threatened limitation on hospital reimbursement for educational costs

Hospitals and other health care agencies will continue to play a significant role in the sponsorship of allied health education programs. However, the role and responsibility of educational institutions will without doubt continue to expand.

(3) The Development of Allied Health Education Programs in Educational Institutions Has Created a New Pattern of Interinstitutional Arrangements

As sponsorship of allied health educational programs has developed in educational institutions, new patterns of relationships with health care agencies have evolved to provide the clinical education component.

Relationships of educational institutions with health care agencies having clinical practicum resources generally follow one of two patterns:

- The Separate Clinical Experience--In this approach, the student spends the first portion of his education in an academic setting and the second part in a clinical environment. These environments differ markedly with respect to mission and educational approaches. The "3 plus 1"* and "4 plus 1"** models often used in medical technology and dietetics programs are examples of this pattern.
- The Integrated Approach--In this pattern, the student's experience in a clinical setting is interspersed with his didactic courses. Typically, the student will be sent to one or more clinical settings adjacent to the sponsoring institution for increasing periods from a half-day to a few weeks. The educational process is coordinated by the sponsoring institution, which is responsible for arranging the affiliated clinical experiences. Some programs using this approach include radiologic technology, physical therapy, and respiratory therapy.

In addition, some programs combine their approach, integrating the clinical education except for blocks of time, generally at the end of the program, during which the student obtains experience in clinical facilities, usually of a specialized nature.

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*Three years of academic classwork plus one academic year at a hospital for clinical education.

**Four years of academic classwork plus one academic year at a hospital for clinical education.

(4) Professional Associations Have Led in Upgrading Educational Programs Through Development of Standards

Professional associations have had the greatest influence in establishing professional standards and upgrading educational requirements for allied health occupations. Most have articulated minimum standards of acceptable education programs and established requirements for individual certification.

The American Medical Association, in conjunction with professional associations, has played a singularly important role in approval of medical allied health education programs. The collaborating professional associations and appropriate medical specialty boards prepare and approve essential requirements for approval of education programs and review the programs applying for accreditation. The AMA in turn reviews and adopts the essentials and accredits acceptable programs. Notably, of the 24 occupations for which the AMA accredits educational programs, standards for 5 were established prior to 1953 and for 6 prior to 1962, as shown in the table below.

Year Essentials Adopted	Occupation
1935	Occupational Therapist
1936	Physical Therapist
1936	Medical Technologist
1943	Medical Record Administrator
1944	X-Ray Technician (now Radiologic Technologist)
1953	Medical Record Technician
1962	Cytotechnologist
1962	Inhalation Therapy Technician
1967	Certified Laboratory Assistant
1968	Radiation Therapy Technologist
1969	Medical Assistant
1969	Nuclear Medicine Technician
1969	Nuclear Medicine Technologist
1969	Orthopedic Physician's Assistant
1970	Histologic Technician
1971	Assistant to Primary Care Physician
1971	Associate Degree Medical Laboratory Technician
1971	Specialist in Blood Bank Technology
1972	Operating Room Technician
1972	Respiratory Therapy Technician
1972	Medical Assistant in Pediatrics
1972	Urologic Physician's Assistant
1973	Electroencephalograph Technician
1973	Electroencephalograph Technologist

Other allied health professional associations, such as the American Dietetic Association, have also established program standards. Additional coordination and input to the upgrading of programs have come from the Association of Schools of Allied Health Professions, which represents all levels of education and sponsors of allied health education.

II. GENERIC CONSIDERATIONS IN ALLIED HEALTH CLINICAL EDUCATION

A number of issues and concerns common to all allied health occupations overshadow factors specific to major areas of study inquiry. These generic considerations and their ramifications for clinical education are discussed in this chapter to provide a context for subsequent treatment of specific issues.

1. ALLIED HEALTH OCCUPATIONS ARE NOT WELL DEFINED

Disagreement as to the number of current allied health occupations--figures range from 125 to 250 distinguishable categories--is one indicator of lack of definition. Contention as to the roles and functions of allied health practitioners also manifests confusion. For example, some observers contend that specialized therapies, such as art, corrective music, etc., are similar to occupational therapy, whereas others draw sharp distinctions.

In essence, allied health occupations comprise an arbitrary grouping of disciplines which may have much or little in common with others in the group.

The various occupations owe their identity to historical circumstance rather than to any clear and present reasons for dividing work among specialists. Speculation on how the roles and functions of the various allied health occupations should and might be changed is, of course, beyond the scope of this study. The task force, however, has been rightly concerned that clinical training, and educational practices in general, should not exacerbate the tendency to useless proliferation of specialty occupations.

Most allied health occupations are not precisely defined--workers may or may not undertake certain responsibilities and functions depending upon circumstances and upon the abilities of individuals. This vagueness is at once a weakness and a source of strength. Poor occupational definition makes these specialties highly susceptible to external vagaries such as ill-conceived licensing laws. The design and operation of educational programs can be a complicated and confusing business. Occupations may attempt to aggrandize themselves by unilaterally declaring exclusive jurisdiction over an area of practice even to the extent of excluding medicine from control.

On the other hand, the vague frontiers between occupations allow more flexibility and efficiency in the utilization of individual skills than would otherwise be the case. The allied health occupations have the potential to adapt more easily to changing health technology than would be possible if they were rigid and caste-ridden. There is substantially more freedom to experiment with more effective and efficient methods of training.

2. OCCUPATIONAL ROLES AND FUNCTIONS ARE BECOMING INCREASINGLY SPECIALIZED DUE TO TECHNOLOGICAL AND ORGANIZATIONAL ADVANCES IN HEALTH CARE

The avalanche of technological and organizational advances related to health care has been extensively treated in the popular and professional press. Among the many repercussions has been increasing specialization in the roles and functions of allied health practitioners. Educational program operation has been directly affected as well.

Specialization has led to the emergence of new occupations, such as the cardiopulmonary technician. It has also led to the development of distinctive categories within occupational fields, such as diagnostic and therapeutic radiology, and of levels within occupations, such as aides and assistants in addition to technicians and technologists.

The emphasis on functional differentiation has led to increased fragmentation of allied health roles. This tendency is accentuated by the absence of an accepted occupational infrastructure. The individual occupations and specialties are preoccupied with their own advancement; they look to technological and organizational advances as substantiation for existing distinctions or a foundation for new differentiations. There is no realistic approach to the provision of health services within which the division of labor among occupations can be critically assessed and then properly balanced.

Another dimension of specialization lies in the assignment of an allied health worker to various types of work--as administrator, teacher, or researcher in addition to general and specialized practice. (General practice is exemplified in the medical laboratory technologist responsible for a small community hospital laboratory, as contrasted with a chemistry blood bank specialist in a big city hospital.)

Clinical education is affected significantly by occupational specialization of both types. Requirements are generated for a variety of different programs, each imposing needs for resources and students. Most importantly, specialization requires us to question the extent and the degree to which students should be prepared only for highly differentiated roles.

3. A LACK OF RELIABLE INFORMATION HINDERS AGREEMENT ON HOW TO PREPARE ALLIED HEALTH PRACTITIONERS

The search for improvements in clinical education and in credentialing of allied health manpower is hampered by the lack of an adequate data base, as well as by disagreement on the means and ends of educational processes and on the division of labor within and between the health occupations. Both factors inhibit revisions in the organization and structuring of allied health functions and manpower categories.

Little analytic research or evaluation has been performed on the processes or results of clinical education for allied health. (A similar situation exists with respect to functions actually or properly performed by allied health practitioners, although this area has received recent attention.) Such studies as have been conducted generally focus on single occupations or levels within occupations and are usually limited in scope and coverage. As a result, there is a conspicuous absence of empirical data on which to base decisions about how, and for what, an occupation should be trained. This scarcity is particularly pronounced in the case of interfaces between occupations and levels within occupations.

Changes in educational processes and the allocation of responsibilities within occupations tend to be arbitrary, supported at best by opinion and local experience. Even within one occupation, there is often sharp disagreement on objectives and policies for education. Naturally, joint action among occupations to consolidate educational programs and overlapping objectives is even more controversial. Without data and research to provide impetus for re-examination of existing positions, broad-scale innovation is stymied.

4. THE INCREASING "PROFESSIONALISM" OF ALLIED HEALTH OCCUPATIONS HAS IMPLICATIONS FOR CLINICAL EDUCATION, EMPLOYERS, AND STUDENTS

There are many indications of increasing professionalism of allied health occupations or rather, in many cases, merely claims to professional status and its prerogatives. There is increased emphasis on autonomy and on a "commitment" to the occupation. Another corollary was cited in the previous chapter: the trend toward requiring more and higher level academic antecedents to occupational training. Pre-employment preparation is thereby extended, although it may hamper filling of job vacancies, impose additional costs on students, and discriminate against some of the best potential workers. Increasing professionalism in allied health has other implications for clinical education, employers, and students. Health care agencies, as providers of clinical education, and credentialing are also affected.

Employers have varied notions of what they require from newly trained allied health manpower. Since continuing education may not be available, the employer may expect (and need) an individual fully prepared to do one particular job. Hence, decisions as to the proper emphasis in basic occupational preparation are complicated, as is the question of the proper end point of formal education.

Emphasis on theoretical knowledge, a concomitant of professionalism, has many ramifications. It requires that educational programs focus more on the underlying scientific basis or "why" something is done and less on the "how." This orientation necessitates more extensive backgrounds on the part of clinical educators and educational faculty and accentuates requirements for senior college and university involvement. These institutions, however, are often not equipped to provide or arrange for effective complementary practicum experiences. Furthermore, an educational program with a theoretical orientation tends to place less emphasis on the practicum or the "learning through doing" a phase.

Very often, the student who completes a program with excellent theoretical content may have only limited ability to perform on the job. Employers may have to provide special experiences to orient the graduate to clinical operations and particular techniques. Employers experience increased costs but limited returns during this orientation period. Alternatively, employers may look elsewhere for their manpower.

Emphasis on professionalism also tends to denigrate capabilities developed through other than "approved" educational experiences. Requirements for formal education may become the *sine qua non* for entry into the occupation; for example, they are made prerequisites to entry through certification or licensure. Employment of capable workers may be thereby hampered. Further validation of the educational program assumes more importance, which stimulates need for additional accreditation.

5. EMPLOYER REQUIREMENTS AND PUBLIC DEMANDS FOR EDUCATIONAL OPPORTUNITIES POSE DILEMMAS FOR ALLIED HEALTH EDUCATION

Decisions as to the sponsorship and operation of clinical education programs in allied health are subject to requirements for employment and to the public demand for education. The conflicting nature of these demands poses a number of dilemmas.

Employers require individuals who are capable of performing specific job functions and fully prepared to do so. Nonoccupationally oriented capabilities may be of incidential value but are generally not essential for satisfactory job performance. Additional employer expectations include the following:

- Graduates of preparation programs will be available when needed to fill vacancies.
- They will require minimal job orientation and adjustment.
- Their requirements and expectations for compensation and advancement will be "realistic," i.e., low relative to nonhealth occupations.

These immediate needs of employers support the contention that clinical education is primarily vocational in nature and suggest that the sponsorship and operation of training programs should rest with the health care agencies or with institutions that are exclusively oriented to vocational education. Additionally, admission could be limited to persons who could be prepared most easily and rapidly for immediate employment. Program content could be similarly restricted to the knowledge and skills necessary to particular employers.

This approach, however, does not prepare students who have the capability to cope with future changes. It would make these occupations unattractive to students who aspire to a college degree. The preparation of adequate numbers of workers may not be feasible without use of the resources of higher education.

The public perceives allied health occupations as providing career opportunities not available in other fields. Students from varied backgrounds and different levels of ability seek such training. Educational institutions capable of coping with large numbers of students with great differences in capabilities are, therefore, needed to provide educational programs. Sponsorship by colleges and universities is often considered essential, since only their resources are equal to this charge. Support for sponsorship by collegiate educational institutions also stems from the viewpoint that preparation programs fulfill two purposes:

- Readying individuals for lifetimes of personal and occupational growth, with employment ancillary to occupational growth
- Providing graduates with recognized academic credentials

Lodging responsibility with collegiate institutions has, however, raised important and unresolved issues. These include the proper mix between academic and clinical education and the mechanisms for providing the clinical education. Further, the educational institution, responsible as it is for providing effective educational experiences, may feel restricted by the basic elements of training that have been established by the professional association. Nevertheless, the educational program is expected to equip students to fulfill employment responsibilities, and legitimate requirements of employers must be taken into proper account.

6. CLINICAL EDUCATION IS SUBJECT TO MANY UNRECONCILED INFLUENCES

Clinical education in allied health today is subject to a myriad of diverse influences. As previously mentioned, professional associations, employers, and educators bring pressures to bear, as does government at different levels. Such groups as ethnic minorities, former servicemen with related experience, and practitioners may have special interests. Changes in society at large, as well as those in special population groups, such as students, exert their own forces. Until recently, the drive to increase the numbers of workers has tended to overshadow other concerns. Action on basic issues has tended to be erratic and often has taken contrary directions. The absence of forums and channels for communication have impeded exchanges that might resolve some of the conflicting attitudes and opinions.

In these circumstances, educational activities reflect the philosophic dissonance. Resources are dissipated in uncoordinated efforts, and detrimental repercussions from hastily conceived actions are not uncommon. Discontent with the existing situation is becoming more widespread and vocal. Change also is augured by increased constraints on resources.

7. THE FUTURE ROLE OF HOSPITAL-BASED PREPARATION PROGRAMS IS UNCLEAR

Institutions of higher education are sponsoring increasing numbers of basic occupational preparation programs in allied health. In certain fields, such as radiology and electroencephalographic technology, however, the majority of preparation programs are still based in hospitals. The role of hospital and other health agency-sponsored programs is increasingly challenged by some, while their continuance is staunchly advocated by others.

Hospitals and other health service agencies are criticized as sponsors of training programs because:

- Learning may be compromised by a focus on agency needs, by inefficiencies resulting from limited educational resources, and by the absence of educational expertise.
- Efficiency may be inhibited by the small numbers of students who can be accommodated.
- Academic credit is rarely given for the learning, which may impede personal educational mobility.
- General education is minimal, particularly as directed to individual development.
- Occupational parochialism may be fostered.

On the other hand, hospital-based programs are seen as essential where educational institutions do not provide preparation or cannot do so meaningfully. For example, requirements for particular categories of manpower in a geographic area may be insufficient to support the establishment or operation of a program in an educational institution. In the case of developing occupations, the need to experiment with functions and the consequent instability of educational objectives may inhibit organization of a formal program. Educational institutions are also criticized for their inability to respond to differential needs of occupations and agencies and their tendency to impose "superfluous" requirements, while hospitals can be more flexible and realistic in adapting training to changed work requirements. Finally, there are undoubtedly some occupations for which collegiate preparation is inappropriate (although some community colleges appear not to share this view).

These contradictions give rise to confusion about the future role of hospital-based programs. That future is threatened by the emphasis on cost containment in health care agencies, although the growing squeeze on health education funding in colleges may restore some balance.

Elimination of hospital-based programs would drastically curtail preparation opportunities and manpower supply in specific occupations or locations. It might also stifle development of necessary new functions and associated knowledge and skills. There are few examples of higher educational institutions successfully providing portions of instruction for hospital-controlled programs.

Satisfactory provisions are largely unavailable for resolving the difficulties inherent in such an arrangement, including:

- Definition of the nature and type of learning experiences to be provided by the educational institution
- Scheduling and integration of experiences provided by the educational institution with those in the agency program so as not to impose unrealistic requirements on students
- Control of these experiences and student progress

The advantages of training programs based in hospitals and other health service agencies need to be recognized in order to achieve a proper balance (whatever that balance may eventually be) between collegiate and hospital-based programs and to ensure that collegiate programs retain sufficient "vocational validity" to provide health services manpower.

* * * *

This discussion has treated programs for the basic occupational preparation of allied health manpower in institutions of higher education and in health services agencies (primarily hospitals). Post-secondary vocational training institutions also make significant contributions in this field. To some extent, remarks about colleges and universities also apply to them, since they do not share the health services responsibilities of hospitals. However, vocational training institutions as a class tend to be more sensitive to job requirements than do colleges and universities, and their objectives are not dissimilar to those of hospital-sponsored programs.

Proprietary training schools are seldom considered in professional health education circles to be an important or useful resource for health manpower. Such attention as they receive is confined to criticism of certain practices of specific schools. However, the continued existence of proprietary programs suggests that they fill real needs, either of students for training without academic prerequisites or a burden of theory or of employers for individuals with specific minimal skills and a motivation to work. In any case, a more positive approach to these programs and their problems seems indicated.

III. CONTENT OF CLINICAL EDUCATION

The common goal of clinical education programs is development of competent allied health practitioners. This study has assumed that such competencies can be identified albeit that methods are yet imperfect. Identification of the knowledge, skills, attitudes, and judgment required of competent practitioners is the first step toward developing the content of clinical education programs. Then, the clinical learning experiences have to be structured and organized in a manner that contributes to effective and efficient development of the required competencies. Finally, some validation method must be used to assure that the objective of the program--a competent practitioner--has been achieved.

PRESENT ISSUES AND PROBLEMS

1. BROAD CHANGES ARE OCCURRING IN HEALTH CARE WHICH AFFECT THE CONTENT OF CLINICAL EDUCATION PROGRAMS

The basic occupational preparation of allied health practitioners is currently being influenced by broad changes in the health care field. These changes have an important impact on the determination of what constitutes the content of an allied health clinical education program.

They also have a less obvious effect on who is responsible for determining and developing the content and how the desired content is developed.

- Advancements in Medical Science and Technology

  Rapid scientific advances in medicine and associated technology have changed, and frequently complicated, the way in which health practitioners care for patients. Generally, increased knowledge and skills are required. The new competencies are acquired by current practitioners through formal or informal continuing education as the need and opportunity arise. Recent graduates, however, are expected to have learned the most up-to-date health care techniques during their basic occupational preparation. Thus, basic education programs are expected to respond rapidly to technologic advances.

- Changing Roles and Functions of Allied Health Manpower

  Innovation and change in the nation's health care delivery system are changing the role and function of many allied health occupations. For example, the emphasis on preventive medicine is expanding the role of certain types of allied health manpower. These new roles and functions are being met by existing occupations, which in some cases are evolving into new specialty areas. Traditional models of service delivery are no longer applicable within many new health care settings which are emerging.

  The concept of "Consumerism" is gaining acceptance in health care whereby the patient is regarded as a client receiving services for which he pays. This approach creates a relationship between patient and practitioner where new and different skills, attitudes, and judgment are required.

- **Increased Demand for a Broad Range of Health Services**

  The sheer volume of services demanded by the public has increased, as discussed in the introduction. Demands for more manpower have resulted in proliferation of new educational programs with demands for clinical experiences and greater specialization within occupations.

- **Pressure for More Effective Manpower Utilization**

  Concern over the effectiveness and efficiency by which we employ health manpower is leading to increased delegation of more complex tasks and associated role expansion. As a cost conservation measure, lower level personnel are being delegated higher order duties and tasks. This pattern, a response to financial pressure, is leading to an expansion of roles. The move by lower level occupations toward professional status is generating a demand for clinical educational courses to train such personnel to meet their work role requirements.

- **Public Demand for Better Care**

  Growing public concern over the quality of service provided to patients demands more thorough training. This need is often translated into requirements for more courses and longer clinical training periods. Implications of the greater degree of accountability include more record keeping, greater diagnostic work, and increased follow-up.

To respond to these broad changes and pressures for change, educators face a dilemma: to include new content within existing occupational frameworks or to create new specialty areas. Both approaches have been taken, resulting in changes in roles and functions.

2. THE RESULT OF CHANGES IN HEALTH CARE IS AN EXPANSION OF REQUIRED CONTENT DUE TO INCREASED LEVEL OF RESPONSIBILITY

The changing health care environment has caused an increase in the competence--knowledge, skill, attitude, and judgment--required of practitioners because of the greater complexity of health care. At the same time, the delegation of increasing responsibility to lower level personnel has placed even greater requirements on them. The greater competencies required are expanding the content of both basic occupational preparation programs and continuing education courses.

The expansion of content has resulted in greater specialization within occupations, along with the growth of the concept of "professionalism" in lower level occupations. The desire to attain "professional" status because of the specialized competencies needed has led these formerly "lower level" allied health practitioners to demand specialized training courses, advocate credentialing for their specialty, and seek greater financial compensation. Educators have responded to these demands primarily by increasing the number of courses required, attempting to cover more topics within given programs, and lengthening the educational experience. Concurrently, little attention has been given to formulating new educational objectives based on changed occupational roles and functions.

3. EDUCATIONAL OBJECTIVES HAVE NOT BEEN FORMULATED TO MEET NEW OCCUPATIONAL REQUIREMENTS

The evaluation of specialized occupations and associated competencies has not been accompanied by appropriate development of educational objectives to meet the new requirements. This exacerbates the more basic difficulty confronting clinical education today--the general lack of well-defined, clearly understood objectives. More often than not, written objectives for clinical education are inadequate or even nonexistent. Where they do exist, they are slow to change to meet changing job requirements. On the national level, educational objectives are very general and often stop short of the clinical or practicum portion of the curriculum. Since the end point of training must be defined before its achievement can be determined, this lack of specific objectives is a serious problem.

The statement of meaningful objectives for clinical training is difficult and as a result is usually done only in broad terms. In general, basic occupational preparation programs attempt to do two things:

- To prepare practitioners who have minimal entry level competencies
- To provide a foundation for further professional and personal growth

Within any one occupation, individual programs may give different emphasis to these two aims. There is room and real need for this differing emphasis.

Regardless of the emphasis they give, most programs attempt to achieve, or say they are trying to achieve, the following goals:

- To produce a capable basic entry level practitioner who has the necessary skill, knowledge, and judgment to function effectively and safely in almost all of the jobs in which he might find himself immediately after graduation
- To provide the student with samples of a wide selection of specialized advanced skill and knowledge or orientation to the occupation and its ramifications
- To orient the student to the entire health services system within hospitals and other health care institutions
- To reinforce good work habits and reliability
- To motivate the student to advance and excel by providing him with role models

These goals do not change as occupational role and function change; rather, objectives change.

While there is general agreement on the goals of clinical education, specific objectives may vary widely by occupation. An objective, as used here, for an educational program is a specific and defined component of the knowledge or skill that the student is expected to acquire. The strategy of objectives for the educational experience, including the practicum, is difficult and is predicated on a clear understanding of the role and function of the occupation within the health care system. Lack of agreement on roles and functions has hindered definition of objectives.

A principal finding of this study is that educational objectives are generally undefined. As discussed above, education programs have goals and objectives although many times they do not know what their objectives are. A necessary precursor to educational program quality is the clear definition of objectives. The simple paradigm in Exhibit VI, following this page, illustrates the relationship between objectives and quality.

The diagram is an oversimplification of real life. However, the intent is to emphasize the point that a clearly defined set of objectives is a necessary precursor to program quality. Any attempt to define occupational role and function as the basis for defining educational program objectives must grapple with the difficulties imposed by rapid change.

Considerable diversity of opinion exists, however, on the specific objectives of basic education, including its clinical component, as they pertain to the level of job preparedness. Views

EXHIBIT VI

EDUCATION PROGRAM PLANNING PROCESS

Current Occupational Role and Function

- ← Change: technological, scientific, social.
- ← Current definitions become obsolete in short order. Need constant update.
- ← Education programs should try to anticipate change.
- ← Can be a multiplicity of roles and functions.

↓

Educational Objective

- ← Must be relevant and precise.
- ← There can be a multiplicity of educational objectives because of multiple roles and functions.
- ← Great confusion at this level because of uncertainty concerning role and function.
- ← Credentialing.

↓

Educational Methodology

↓

Quality ← Dissatisfaction here because there are few standards of quality.

range from the belief that programs should be structured solely to achieve job entry level competence to the view that the content of all programs should provide broader educational preparation for lifetime career development and upward mobility. The belief that both types of programs should exist for each occupation, thereby preparing an appropriate mix of "Indians and chiefs," is also widely held. For some occupations, there is a widely held belief that "assistants" should be prepared for entry skills, while "professionals" need (or can afford) little of this.

This diversity of opinion can cause misunderstandings between educators and clinicians and between program sponsors and employers.

The adherents to these differing views will necessarily hold differing expectations concerning the competency of the program graduate. This is especially important as it relates to prospective employers.

4. THE PROCESSES BY WHICH CONTENT IS DETERMINED ARE LARGELY INEFFECTIVE

Study of the processes by which clinical education is designed and offered is more revealing than "end-point" analysis.

If it were possible, a study of whether or not clinical education is reaching certain specific end points would at best indicate its adequacy today. More basic, and more important, is whether or not the processes involved in the providing of clinical training operate well enough. In view of advancing health technologies and the changing roles and functions of allied health manpower, "well enough" must include the ability of these processes to produce adaptations and re-adaptations of educational objectives and practice to new demands, as well as sufficient flexibility to allow, within a framework of acceptable educational practice, experimentation with better ways of preparing people for jobs.

For these reasons, this study has concentrated on examining the processes leading to design and implementation of clinical education programs and concludes that these processes, which are neither economical nor efficient, must improve.

(1) Certain Processes (or Their Lack) Lead to Inappropriate Content of Clinical Education

Elsewhere in this report, processes are discussed by which education is managed, resources are developed, money is found, standards are set, and students are selected and encouraged. This chapter is especially concerned with those processes which encourage or discourage the development, at any point in time, of the appropriate content of clinical education programs. The nature of content is a reflection of educational objectives and their consequent specific student end points expressed as specific proficiencies. (The amount of content that is appropriate is a reflection of, among other things, the efficiency of the educational technologies that are used and the abilities of students to proceed more or less rapidly to an end point.) The processes of most concern in determining the nature of basic occupational education program content are:

- The determination of current roles and functions of the occupation
- The specification of the kinds and amounts of technical or professional proficiency that are required for entry-level competency in any occupation
- The determination of what education and training, in addition to that necessary to develop the specified proficiencies, shall be required and provided as basic occupational preparation
- The determination of the types of proficiencies that can be developed in the (relatively low cost) didactic portion of an educational program, as opposed to the practicum

For some of the occupations with which this study is concerned, attempts are being made to improve one or more of these processes. From experience to date, we can conclude that:

- There are insufficient factual data available (such as task analyses or, more simply, the number of persons in an occupation holding jobs of a certain type) for carrying out these processes.
- Methods for identifying and quantifying the most basic proficiencies among these occupations are deficient.
- The organizational structure that is desirable in order to pursue this work does not exist.
- The considerable amounts of resources (most definitely including the time of knowledgeable and patient people) required do not come readily to hand.

(2) The Processes Leading to the Amount and Structure of Content Are Also Inadequate

Given a certain content, the structure of a practicum presents no difficulties provided that all students arrive with the same attitudes, knowledge, and skill; all progress at the same rate; and all have the same interests and employment opportunities. However, these conditions are seldom found. The variation encountered here requires that the content of practicum be arranged in such a manner that it:

- Bears maximal relationship, in subject matter and time of presentation, to corresponding elements in the didactic portion of the curriculum

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- Provides each student with sufficient exposure (only) to each clinical training element to assure his proficiency in that element
- Accommodates students who have previously acquired some of the necessary proficiencies (by, ideally, determining what elements of the practicum he has previously mastered and providing useful alternatives)

Thus, strengthening the processes which determine the nature of content and its amount and structure is a necessary precursor to improving the effectiveness of clinical education program content.

5. THE LACK OF CLEARLY DEFINED OR UNDERSTOOD OBJECTIVES CAUSES DIFFICULTIES IN DEFINING CONTENT

The lack of accepted end points for clinical education is symptomatic of its problems. For any allied health occupation, the deficiencies of practicum cannot be cataloged because the objectives, as a series of end points of student proficiency, are not stated. This inability to state end points, however, is convincing evidence that there are serious deficiencies--an opinion confirmed in this study by interviews with educators, employers, and members of the professions concerned.

Specification of the content required to meet program objectives should be predicated on objectives which are stated explicitly (and preferably in measurable terms). The inadequacies of the objectives themselves in allied health clinical education hinder any meaningful definition of program content. Criticism leveled against programs which have poorly defined or misunderstood objectives frequently takes one of two forms. If competence sufficient to obtain employment is the purported aim, program content may contain extraneous material that prolongs clinical education and increases its expense. On the other hand, if the program has a broader aim, such as preparation for a lifetime career, clinical content may provide insufficient background.

Most programs generally seek a middle ground with some emphasis on one or the other of the above aims. Achieving an appropriate balance between legitimate student needs for personal development and occupational competency may pose difficulties and prolong education. Additional complications may result from the desire of a program to prepare proficient practitioners with more than entry level skills, that is, graduates who are thoroughly competent as a result of education and practice.

(1) Accreditation Standards and Guidelines Are Too Vague To Provide Guidance for Development of Objectives and Content

National professional organizations have, through the accreditation mechanism, entered the difficult area of defining educational objectives and content. Recently there has been a move away from quantitative requirements in educational standards and guidelines to give programs more latitude.

Occasionally, this trend toward flexibility has resulted in definitions of objectives and content that are too broad to be meaningful. As a result, the contribution which the practicum should make in the education of a student is not clear. The following quotations extracted from the standards of approved programs of three occupations are presented to illustrate the vagueness of standards currently in use:

- "Supervised field experience is an integral part of the educational program. These experiences should be provided outside as well as within the medical model, with supervision as needed to relate experiential learning to content."
- "The field experience, as the critical part of the curriculum which leads to competency to practice must be well supervised to assure it provides learning experiences, not just hours of observation or apprenticeship."
- "Incorporated in the program for the preparation of ... technicians should be planned laboratory experiences and directed practice which provide a transition from theory to application. These activities should include both laboratory practice and field assignments, case studies, and similar

> educational designs which allow for the application of previous and ongoing technical learning under the direction of competent instructors and practitioners."

(2) Quantitative Requirements Are Used in Place of Substantive Definitions of Objectives and Content

Where educational program requirements or guidelines are specific, it is most frequently in the setting forth of quantitative requirements, such as numbers of hours, teacher-student ratios, or educational credits. Exhibits VII and VIII, following this page, show the extent of specificity in accreditation standards and guidelines, respectively, for occupations of primary interest to the study.

(3) Content and Curricula Are Not Defined or Structured To Recognize Common Elements Among Occupations and Levels

Current definitions and structure of content and supportive curricula do not lend themselves to grouping of elements common to different occupations or even to levels within occupations. As a result, core curricula and the health team approach--two approaches which aid career mobility--are difficult to implement. Core curricula and clustering of related occupations for education also are becoming increasingly popular concepts resulting from the search for economy

EXHIBIT VII

SPECIFICITY OF ACCREDITATION STANDARDS

	Specifications of Content of Clinical Training	Number of Hours of Clinical Training	Faculty Qualifications	Instructor Student Ratio	Clinical Facility Requirements	Clinical Material Requirements
Certified Laboratory Assistant	Yes	---	Yes	Yes	Yes	Yes
Dietitian	---	---	Yes	---	Yes	---
Dietetic Technician	Yes	Yes	Yes	---	Yes	---
Medical Assistant (AMA)	Yes	---	---	---	---	---
Medical Assistant (AMT)	Not Applicable Because of Use of Simulation					
Medical Laboratory Technician (AMA)	---	---	Yes	---	Yes	Yes
Medical Laboratory Technician (AMT)	Not Applicable Because of Use of Simulation					
Medical Record Administrator	Yes	---	---	---	Yes	---
Medical Record Technician	Yes	Yes	---	---	Yes	---
Medical Technologist	---	---	Yes	---	Yes	Yes
Occupational Therapist	---	Yes	Yes	---	Yes	---
Occupational Therapy Assistant	---	Yes	---	---	---	---
Operating Room Technician	Yes	---	---	---	---	---
Optometric Technologist	---	---	---	---	---	---
Optometric Technician	Yes	---	Yes	---	Yes	---
Physical Therapist	Yes	Yes	Yes	Yes	Yes	---
Physical Therapy Assistant	---	---	---	---	---	---
Radiologic Technologist	---	---	Yes	Yes	Yes	Yes
Respiratory Therapist	---	---	Yes	---	Yes	---
Respiratory Therapy Technician	---	---	Yes	---	Yes	---

EXHIBIT VIII

SPECIFICITY OF ACCREDITATION GUIDELINES

	Specifications of Content of Clinical Training	Number of Hours of Clinical Training	Faculty Qualifications	Instructor Student Ratio	Clinical Facility Requirements	Clinical Material Requirements
Certified Laboratory Assistant	---	---	---	---	---	---
Dietitian	---	---	---	---	---	---
Dietetic Technician	---	---	---	---	---	---
Medical Assistant (AMA)	---	---	---	---	---	---
Medical Assistant (AMT)	Not Applicable Because of Use of Simulation					
Medical Laboratory Technician (AMA)	Yes	---	Yes	Yes	---	---
Medical Laboratory Technician (AMT)	Not Applicable Because of Use of Simulation					
Medical Record Administrator	Yes	Yes	Yes	---	Yes	---
Medical Record Technician	Yes	Yes	Yes	---	Yes	Yes
Medical Technologist	---	---	Yes	Yes	---	---
Occupational Therapist	---	---	---	---	---	---
Occupational Therapy Assistant	---	---	Yes	---	---	---
Operating Room Technician	---	---	---	---	---	---
Optometric Technologist	---	---	---	---	---	---
Optometric Technician	---	---	---	---	---	---
Physical Therapist	---	---	Yes	---	Yes	---
Physical Therapy Assistant	---	Yes	Yes	---	Yes	---
Radiologic Technologist	---	Yes	Yes	---	Yes	Yes
Respiratory Therapist	Yes	Yes	Yes	Yes	---	Yes
Respiratory Therapy Technician	Yes	Yes	Yes	Yes	---	Yes

and career mobility. These advantages are stimulating a number of programs to experiment with core or cluster educational experiences, with results which are still undetermined.

An important factor which discourages the search for commonalities, and consequently encourages duplication and possibly unnecessary specialization, is the tacit hesitancy to recognize that content can be shared between occupations or levels within occupations. This belief is held by many persons oriented to a particular occupation, many of whom also hold that some occupations are "more equal than others."

(4) Content of Continuing Education Has Been Hampered by a Lack of Standard Career Development Paths

Allied health professions are currently in a state of flux and controversy regarding the development of assistant level occupations and advanced level specialists. Career ladders with defined steps and career development paths are rare in most allied health disciplines. As a result, continuing education courses have received little attention because of the unspecified objectives and goals for technical and personal development of practitioners.

6. VARIOUS GROUPS DIFFER IN THEIR VIEW OF JOB ROLES AND FUNCTIONS AND, HENCE, CONTENT OF REQUIRED EDUCATION PROGRAMS

The main groups interested in allied health job roles and functions--professional associations, medical and related practitioners, employers, third-party payers, and government--have differing views on manpower utilization. These differences of opinion are naturally reflected in objectives and content of clinical education to meet health manpower requirements and are further complicated by educators.

Allied health practitioners, individually and in groups, are considered to be most knowledgeable about the tasks and content of their own occupations. There is some disagreement, however, with respect to the role of physician practitioners in determining content relating to various allied health occupations.

The role of allied health professional associations has also been questioned. Professional associations see themselves as the composite of their members' expertise and, therefore, the natural ones to take the lead. Members of the associations generally express a need for such an organization to:

- Protect the patient
- Ensure high-quality health services
- Provide uniform national standards

The associations have been described by critics, however, as self-serving groups where influence may compromise the basic issue of how health services can be provided most effectively and efficiently.

It is generally agreed that these national associations should provide guidance in the determination of content and competency, based on the nationwide resources at their command. However, many educators are particularly concerned that such guidance does not adequately incorporate input from other knowledgeable sources to provide special expertise in such areas as:

- Applications of task analysis methodology
- Interface with other occupations
- Measurement of proficiency

Processes for determining content are controlled primarily by the professional associations which make various provisions for obtaining inputs from members who are engaged in education. One approach is to solicit suggestions on a periodic basis. A second approach is to ensure that such members are included on the committees which draft or review the standards and guidelines for program content. This control of content by associations has not heretofore been distinguished from control of statements of job requirements, an area in which employers and government (as representatives of the public) are most interested. Desire for greater participation in job role definition has been expressed by general educators, employers, and government.

The unresolved status of what the role and function of the allied health worker ought to be precludes determination of appropriate program content to prepare that worker.

7. GENERALLY ACCEPTED METHODS FOR TRANSLATING EDUCATIONAL OBJECTIVES INTO CONTENT AND CURRICULA DO NOT EXIST

Organized methods for determining and updating content are needed. This need is unanimously asserted across all categories of experts. It also is agreed that content needs to be updated more frequently at the local level than the national level and that needs for frequency of revision will vary by occupation. No general unanimity, however, exists as to specifics of the methods required, which impedes updating and delays change.

A number of different approaches to determine and update content and curricula are in use at national and program levels. These approaches range from expert opinion to sophisticated analytic methodologies such as task analysis. A brief description of analytic methods which have been used is contained in Exhibit IX, following this page.

EXHIBIT IX

CHARACTERISTICS OF ANALYTIC METHODOLOGIES FOR CONTENT DETERMINATION

Methodology	Input	Time Horizon	Approach
Critical Incident Analysis	Observations of practitioners by trained observers using scaled inventories of tasks and elements	Present	Determination of tasks and elements critical to performance from analysis of observational data; grouping of tasks based on critical relationships established empirically
Function-Need Analysis	Survey of consumers regarding health care needs; canvass of experts for description of current/emerging functions and related knowledge and skills	Present-Future	Requirements for health care functions identified on basis of needs; functions organized into groupings to meet needs without regard to current occupational configurations; knowledge, skills, and related education structured by these groupings
Task Analysis I	Survey of practitioners; experts for review and refinement	Present	Nature, frequency, and importance of tasks identified through survey and expert validation of task inventories which provide the basis for knowledge/skill clarification and development of associated educational programs
Task Analysis II	Survey of practitioners and employers; experts for review and refinement	Present	Nature, frequency and importance of tasks, detailed task elements reflective of knowledge and skills, and related education/training identified through analysis of practitioner and employer input obtained from refined task element-preparation inventories; expert validation of task element, knowledge/skill, and education correlations; structuring of task groupings and educational modules based on correlations and expert input
Task Analysis III	Observations and interviews of practitioners; employers for special elements; experts for correlation, review, and refinement	Present-Future	Nature, frequency of application, and importance of task-related knowledge, skills, and attitudes identified through analysis of observations and interviews by trained analysts; tasks grouped by knowledge/skill/attitude correlations into levels of increasing sophistication; levels validated through employer and expert review; educational curricula designed on basis of knowledge and skills related to levels

None of the more sophisticated methods has gained widespread acceptance. Considerable interest regarding their use, and various attempts to apply them, indicates the shift from reliance on expertise to systematized approaches. In the absence of other techniques, there is a continued reliance on the experience of traditional participants in content determination and on expert opinion where "experts" tend to be professional or institutional associates.

(1) Controversy About the Merits and Disadvantages of Different Techniques Has Hampered Their Use and Acceptance

The lack of agreement regarding particular techniques and their associated merits or problems extends from program level personnel to those engaged in development and implementation efforts. Numerous and uncoordinated development efforts--as in task analysis--contribute to the confusion.

Widespread application of the more sophisticated methods is also hampered. They are still essentially in development, and substantial commitments of dollars and time are required for their implementation. Furthermore, there has been minimal experience with different approaches to task analysis and function/need analysis, particularly the latter, in health occupations.

(2) Deficiencies in Curriculum Planning, Development, and Implementation Detract From Clinical Education

The general absence of models for clinical curricula causes difficulties for programs, particularly those with limited resources. Programs which have found resources to undertake vigorous curriculum development have concentrated on their own needs. Their efforts include limited attention to the wider application of a systematic approach.

Once curricula are developed, systems to evaluate and revise them are equally necessary. Many programs have yet to implement meaningful systems for evaluation, a problem facing accrediting bodies.

(3) Poor Integration of Didactic and Clinical Components of Curricula Results in Gaps and Overlaps of Content

A major reason for the poor integration of didactic and clinical experiences is the lack of defined objectives for clinical education, a problem discussed earlier.

Development efforts under educational sponsorship tend to focus on didactic rather than practicum content. Efforts to determine practicum curricula are largely informal and primarily instigated by clinical personnel. The resulting didactic and practicum curricula often are not coordinated, even when they are developed for one program. This applies to both what is taught and the sequence in which it is presented.

The widely held concept that the teaching of didactic content should be followed as soon as possible by the associated clinical experience often is not reflected in practice, usually due to practical considerations. Students must attend classes at hours dictated by the school's overall schedule. Clinical experiences are often available only in blocks of time for which numbers of educational institutions compete. Other factors contributing to a lack of coordination include distance between the educational and clinical settings and practices within health care agencies.

The shortcomings of objectives and curricula often result in programs which are poorly managed, in terms of subject areas to be covered, methods of instruction, and sequence and duration of curriculum elements. Common complaints are that the practicum is too short and that clinical practice does not follow associated didactic learning soon enough. The end result is that duplication or, worse, gaps occur in the student's education.

These general inadequacies of content and curriculum determination produce clinical education programs which are less than satisfactory and which could be improved.

RECOMMENDED ACTION

As presented in the preceding pages of this chapter, the content of clinical education is generally determined by an in-exact process. As a result, clinical education content is often inadequate and inappropriate. The recommendations which follow are designed to strengthen and improve content and the processes by which it is determined.

8. EFFORTS TO IMPROVE CLINICAL EDUCATION SHOULD BE INTENSIFIED

The study group's opinion that the current clinical education for allied health personnel does not adequately prepare them for employment is reflected throughout this report. A basic reason for the inadequacies is found to be the lack of defined educational objectives. Despite this, much can and should be done to improve training. Many types of efforts are underway; rewriting of accreditation standards to eliminate vagueness, promulgation of better affiliation agreements between colleges and hospitals, and workshops and courses of study for clinical instructors are examples. The allied health professional associations are initiating most of these efforts, aided in many cases by the Federal Government, accrediting bodies, private foundations, and others. However, the total of this activity, relative to the need, is not impressive. Indeed, for some occupations it appears that the best efforts that are likely to be made, barring a much higher level of investment in the improvement of clinical education, will be insufficient to keep pace with changing health technologies and that obsolescence in training will inevitably increase.

These good efforts should be greatly increased to ensure that available resources are used efficiently and that clinical education meets its objectives, however imperfectly we may be able to define those objectives at a given time.

9. MAJOR EFFORT SHOULD BE DIRECTED TOWARD BETTER DEFINITION OF OBJECTIVES AND COMPETENCIES, BASED ON SYSTEMATIC ANALYSIS OF JOB ACTIVITIES

The improvement of content of clinical education programs should be achieved by a series of comprehensive national efforts. The first step is an analysis of occupational tasks to establish standard occupational descriptions. Then, educational objectives corresponding to the jobs and tasks described should be written.

These efforts should be carried out initially at the national level to assure a broad perspective which is not available to individual programs. Once the basic analysis has been performed and requisite competencies defined, individual programs will be able to adapt and refine the broad statements of objectives to meet their individual needs.

The recommended approach assumes that the overall role and function of the allied health worker as a part of the health service system has been established previously to the satisfaction of all concerned.

(1) Structured Analysis To Determine the Essential Elements of Work Activities Should Be Undertaken

Structured analytic methodologies--that is, analysis of task, job, critical incident, or function-need--should be used to determine the essential work elements of each occupational level. The work activities should be used as a basis for definition of what the occupation or job entails and the competencies needed to perform proficiently. Use of analytic approaches on a multioccupational basis would facilitate identification of commonalities in content as a basis for development of core curriculum and courses. Greater structuring also will assist program adaptation of national standards by providing an identifiable base for their efforts.

Given the high costs and lack of consensus over the merits of the various analytic methodologies, national authorities in the development of statements of role and function must still rely on collective judgment. However, in the use of this collective judgment, we need greater recognition than is usually exercised, including analytic approaches.

The merits and uses of analytic methodologies for competency and content determination should be investigated critically and systematically. A comparative study is needed to guide efforts to apply the methodologies, since agreement and appreciation of the methods are both generally lacking. The study should highlight their relative merits and most appropriate uses in different applications and environments.

Issues which should be examined include:

- Applicability of the methodologies by occupation, by level within occupation, and by desirable output
- Comparative worth of methodologies for initial definition or subsequent updating
- Value of these analytic approaches to local programs as contrasted to national associations

(2) Educational Objectives Should Be Written Based on Job Analysis Results

The basic outcome to be achieved by clinical education programs for allied health is a competent practitioner, i.e., an allied health worker who can provide safe, humane health service. The competencies which a practitioner needs, including knowledge, skills, attitudes, and judgment determined as a result of the analysis, should be the basis of educational objectives. Program objectives should set forth the terminal behavior (competence) to be achieved by students through learning processes, thereby providing a definitive base for planning and development of clinical education. Expressed in this manner, objectives will also support evaluation of the effectiveness of learning experiences, changes as measured against desired outcomes. To be useful to the different participants in clinical education, arrangements should be made for broader involvement of interested parties in the definition of objectives.

(3) Objectives Developed at the National Level Should Distinguish Between Entry-Level Competence and Increasing Proficiency

Proficiency is considered to be the more advanced levels of competence derived from learning and experience.

Varying degrees of proficiency should be established for each occupational level, recognizing that their attainment may vary by practitioner abilities, assignments, and educational experiences. This distinction should be clearly made to guide program development and the operation of credentialing.

Competencies should be defined to recognize both the commonalities and the differences characteristic of occupational categories and levels. Recognition of the commonalities is important for effective and efficient clinical education and for utilization of allied health manpower. Such recognition provides a foundation for structuring multi-occupational, or core, courses and learning experiences. Vertical and horizontal mobility of practitioners is enhanced by such education and by the specification of occupational commonalities. This in no way implies that differences between specialties should be ignored, since specific competencies are essential; rather, it suggests that maximum recognition and utilization of common competencies can be beneficial.

(4) Objectives and Competencies Should Be Defined by Occupational Level and Should Recognize Different Roles

Within occupations there are requirements for different types and depths of knowledge, skills, and judgments. These differences should be recognized in definitions of objectives and competencies which should be written for each occupation and each level within the occupation. The role assigned to an individual in the work environment may range from practitioner to instructor to administrator. These roles may entail particular competencies which should be reflected in the definitions.

(5) National Professional Associations Should Write Broad Statements of Clinical Education Objectives With Input From Other Sources

Definition of meaningful clinical education objectives for the different allied health occupations will require the involvement of professional associations, individual programs, educators, and employers. Professional associations, which acknowledge their responsibility to programs and the public to provide guidance in preparing competent practitioners, have a perspective at the national level that is not available to individual programs. On the other hand, professional associations cannot be expected to be knowledgeable of the specific competencies required in particular locations or knowledgeable of the abilities of individual programs or their students. Therefore, programs should be responsible for refining these objectives to reflect their circumstances. For example, a program preparing practitioners in an area requiring large numbers of assistant personnel might expand nationally developed objectives to encompass preparation of clinical instructors for assistant-level programs.

Development of realistic objectives requires input from various sources, especially those familiar with required competencies. Practitioners in these occupations provide an important source of information. However, related medical practitioners, employers, and the public may have different expectations concerning required knowledge, skills, and attitudes. Educational experts can help to ensure that objectives are stated to support identification and organization of learning experiences in light of learner capabilities.

Professional associations and programs should establish mechanisms to involve all these participants in defining and updating objectives. These mechanisms should reflect the occupational development, educational capabilities, and experience of the association or program. For example, substantial employer input should be arranged in the case of emerging occupations or specialties. Substantial input from related medical practitioners and educational expertise is also vital.

10. CONTENT SHOULD BE BASED ON OBJECTIVES, NOT SUBSTITUTED FOR THEM

Content is the means to achieve the objective of clinical education, that is, competency as a practitioner. It is, therefore, not an end in itself; achievement of competency rather than mastery of content is the goal. This distinction is critical to any determination of clinical education content since it requires that content be explicitly derived from competency objectives and not substituted for them. In turn, definitions of content such as those contained in accreditation standards and curriculum guidelines should reflect content's facilitating role. It should be emphasized that there is a need for a common core of clinical experience, which should be shared by all allied health professions, thereby facilitating the movement between occupations.

Accreditation standards should embrace accepted clinical education objectives for didactic and practicum components. Other elements in the standards should be directly and explicitly related to the statements of objectives. In turn, all clinical education curricula, modules, and courses should be founded on these statements or more specific versions thereof. These relationships should also be clearly delineated.

11. IMMEDIATE IMPROVEMENTS IN THE EFFECTIVENESS OF CONTINUING EDUCATION PROGRAMS SHOULD BE GIVEN HIGH PRIORITY

The recommendations described above apply to continuing education, as well as basic occupational preparation programs. Clinical education should be responsive to continuing education needs for practitioners and persons reentering the health system. These needs are increasing rapidly, and clinical education should be made available to meet these needs. Organized educational experiences should focus on clinical proficiency and might be provided as modules for established courses for advanced level students or as separate course offerings.

(1) Professional Associations and Educational Institutions Should Recognize Their Responsibilities To Support Continuing Clinical Education

Responsibility for continuing clinical education rests with both professional associations and educational institutions. Both should play active roles in its design and provision.

The professional associations should continue to provide principles and guidelines for continuing education and to ensure that practitioners maintain at least minimum competency, appropriate to their level of work. Educational institutions should provide as many opportunities as possible for practitioners to update and maintain their clinical skills and knowledge. Ways in which continuing education can be provided include refresher courses, seminars on recent technological advances, and workshops on specialized techniques. Educational institutions could appropriately act as coordinators for continuing education experiences provided by professional associations and clinical facilities.

(2) Employers Should Recognize Their Obligations To Facilitate and Participate in Employee Development

Employers should actively participate in the provision of continuing clinical education, both in their own institutions and in educational institutions. They should also recognize their responsibilities toward their employees--and, of course, the public whose health and safety are at stake--to facilitate access to continuing education.

The responsibilities of employers go beyond merely encouraging continued development of proficiency in health workers. To provide high-quality health care, employers should establish goals for efficiency and increased proficiency and should then provide means for those goals to be achieved. At a minimum, employers should support employee attendance at continuing education courses for maintaining competence and also developing proficiencies and/or new skills.

* * * *

In summary, the content of clinical education is poorly defined due to lack of clearly established educational objectives. As shown, lack of such objectives is due in large part to confusion over occupational roles and functions. Ineffective methods for determining content and curriculum are also major problems. Recommendations have been made for developing the requisite objectives and for means to improve the development of content and curricula to meet those objectives.

IV. CREDENTIALING IN CLINICAL EDUCATION

Credentialing related to allied health workers consists of three processes:

- ACCREDITATION is the process by which an agency or organization evaluates and recognizes a program of study or an institution as meeting certain predetermined qualifications or standards. It shall apply only to institutions and their programs of study or their services.
- CERTIFICATION is the process by which a nongovernmental agency or association grants recognition to an individual who has met certain predetermined qualifications specified by that agency or association.
- LICENSURE is the process by which an agency of government grants permission to persons meeting predetermined qualifications to engage in a given occupation and/or use a particular title or grants permission to institutions to perform specified functions.

Credentialing affects clinical education programs directly through accreditation essentials and guidelines. Certification and licensure affect the graduates of clinical education programs and thereby influence the educational process.

PRESENT ISSUES AND PROBLEMS

1. CREDENTIALING REQUIREMENTS HAVE HAD A POSITIVE INFLUENCE ON ALLIED HEALTH EDUCATION

A common purpose of accreditation, certification, and licensure, i.e., credentialing, is to protect the health and safety of the public by ensuring that allied health workers possess at least the minimum capabilities essential to safe performance. Efforts to achieve this common purpose have resulted in a number of positive gains, which are discussed in the following sections.

(1) The Credentialing of Didactic Programs Has Resulted in Establishment of Widely Recognized Minimal Requirements for Program Quality and Content

Accreditation can only identify the minimum requirements for an education program. Thus, accreditation standards help to ensure at least a minimum level of education program quality and to foster basic consistency among programs. Well-defined and understood standards provide reliable guidance for educators, students, and employers.

Certification and licensure are designed to prevent unqualified practitioners as well as provide for minimal standardization. More specifically, licensure is a function of government to provide minimum protection for the public.

Certification, on the other hand, is intended to identify individuals with more than minimum competency. Another objective of certification is providing employers with some indication of the abilities of practitioners. Since certification is nationally applied, it contributes to uniformity of standards and assists in enhancing job mobility between geographic locations.

(2) Credentialing Guides Program Design and Operation

Accreditation and certification programs provide valuable guidance and support for the design and conduct of clinical education programs. The standards and guidelines for accreditation provide a foundation for program establishment. Certification examination results, which are provided to programs with increasing frequency and detail, can be used to gauge program effectiveness on a comparative basis nationally. Reports of evaluations of accreditation site visits provide similar input.

For many occupations, however, credentialing has had little or no effect on the clinical education phase; while in other cases it has had little or no effect on the didactic phase.

(3) Credentialing Standards Can Help To Assure an Appropriate Balance Between Didactic and Practicum

The current balance of didactic and practicum elements in the education process has come under increasing scrutiny. The duration and even the necessity of clinical practicum are being reevaluated. Increased attention to efficiency in education and use of technological advances have stimulated interest and investigation of possible alternatives, including increased use of simulated clinical experiences.

In contrast, many clinicians are concerned that clinical education may be eliminated from basic occupational programs or be reduced to an inadequate level. It is felt by these clinicians that explicit requirements for practicum are needed in accreditation and licensure standards to forestall such development.

2. INFORMED PERSONS DISAGREE ON THE NATURE AND EXTENT OF THE IMPACT OF CREDENTIALING ON CLINICAL EDUCATION

The many specific requirements applicable to clinical education which are embodied in the various credentialing processes represent an important influence. The influence varies widely by occupation and by credentialing process, as does the perception of its importance. Professional associations and practitioners generally assert that credentialing has more good than bad influences. Educators and employers, however, are more likely to point out the shortcomings of the credentialing processes.

Position statements from selected major health, educational, and professional organizations regarding credentialing in allied health are presented in Appendix E.

(1) Basis of Clinical Education Is Often Structured on Requirements Embodied in Accreditation Standards and Guidelines

When accreditation standards have an influence on clinical education, it has, on the whole, been beneficial. It can be effective in various kinds of ways. Some standards specify the required duration of clinical education by allied health education programs in terms of total calendar time or hours by subject area. Coverage of specific clinical subject areas may also be mandated. Qualifications of faculty and instructor-student ratios are spelled out in other cases, as are requirements for exposure to patients and/or to patient materials in specified amounts.

Some accreditation requirements are set forth by guidelines rather than standards; however, program personnel frequently do not distinguish between the two.* For example, even though the requirements regarding hours of clinical practicum for radiologic technologists are stipulated in the guidelines, many clinical staff and educators believe they are dictated by the standards.*

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*The distinction is that standards establish the minimum requirements to which programs must adhere. Guidelines provide amplification of preferable approaches.

The nature and specificity of requirements for clinical education differ by occupation. Most occupations specify a period of practicum in a clinical setting. The American Medical Technologists, however, recommend that training of laboratory personnel is best achieved in an academic setting with emphasis on simulated laboratory training apart from the clinical laboratory. Requirements can be very detailed or quite loosely worded. The American Dietetic Association, in setting standards for undergraduate programs in dietetics, states only that "faculty members be adequate in number, education, and experience to effectively implement the program."

Recent revisions of the standards for other occupations have relaxed requirements for a specific number of hours in clinical areas. Examples include the American Occupational Therapy Association and the American Society of Clinical Pathologists/American Society for Medical Technology.

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*In this particular instance, the guidelines have been specifically disapproved by the AMA.

(2) Certification Indirectly Reinforces Accreditation

Certification influences the outcome of education in that it is directly applicable to individuals. In a majority of instances, a person must have completed an accredited program to be eligible for certification. Individual program staff often cite certification requirements as an important reason for seeking and maintaining accredited status. They feel that such status is necessary to students' progress and career opportunities. Where certification eligibility can be established through other means such as experience, lengthy time requirements may have to be met. For example, both medical technologists and medical laboratory technicians who have not attended an accredited program must have five years of laboratory experience, in addition to the education experience, to be eligible for certification.

Certification also influences clinical training because of the tendency to "teach to the test," although this approach is officially discouraged in some professions and deplored in others.

Certification is also related to licensure. In a few states, such as California and Hawaii, certification is required for licensure. In other states, such as Connecticut, Florida, Minnesota, Montana, and South Dakota, certification can be substituted for other specific eligibility requirements and almost automatically provides licensure.

(3) Allied Health Licensure Also Affects Clinical Education

The indirect effects of eligibility requirements for licensure are comparable to those in certification; that is, the necessity of accreditation is reinforced. Also, teaching to the test frequently occurs. The relationship between accreditation and licensure is particularly strong because state licensure is often limited to those who have successfully completed programs of study approved by the licensing board and/or accredited by professional associations. Furthermore, where they exist, alternative eligibility provisions are quite rigorous.

Some state licensure programs include specific standards regarding length of training, curriculum content, staffing, qualifications of students, and type of facility to be provided. Licensure statutes also influence decisions as to establishment of allied health programs. Where statutes provide for particular categories of workers but not others, institutions are reluctant to undertake programs because graduates may not be able to find employment for which they have been prepared. An example of this is found in California, where licensure statutes specify medical technology and laboratory assistant requirements and functions but make no mention of medical laboratory technicians.

3. CREDENTIALING REQUIREMENTS ARE THE PRINCIPAL DETERMINANT OF CLINICAL EDUCATION PROGRAM OBJECTIVES AND METHODOLOGIES

Too often credentialing requirements, as they presently exist, are not sufficient for educational program design. However, they are generally the principal determinants of clinical program objectives and methodologies. As noted earlier, the accreditation guidelines and standards of professional associations have great influence on clinical education. Certification requirements also are used as a basis for educational program design. However, some individuals criticize credentialing requirements for not being occupationally relevant.

(1) Credentialing Requirements Are Not Well Understood by Some Personnel in Clinical Education

In numerous instances, personnel associated with programs--both educators and clinicians--mention specific "requirements" for program accreditation which are not, in fact, required. References to the criteria used by accreditation survey teams often indicate confusion between minimal specifications and desirable practices. A lack of distinction between standards and guidelines is prevalent in the allied health literature. In many cases, "standards" have been erroneously cited as constraints to effective program design, impediments to innovation, or barriers to the effective articulation of training at various levels within an occupation.

Several reasons may account for this lack of understanding of credentialing requirements on the part of concerned personnel:

- Standards and guidelines are sometimes too vague.
- Accrediting authorities have failed to clarify the distinction between standards and guidlines.
- Some program personnel may fail to keep up with developments and changes in accreditation standards and guidelines.

(2) Credentialing Measures Often Are Not Relevant To Work Requirements

In only a few instances are credentialing requirements based on analysis of job position requirements. Critics have suggested that some requirements are established or increased by professional associations merely to elevate their own status.

Lack of relevance in accreditation standards is a serious problem, but this deficiency in certification and licensure examinations is of greater concern. Award of individual credentials is usually the final test of whether a person is competent to perform a job. Often, however, some of the competencies which are being tested are not essential to the job, or the process itself is not applied objectively. In addition, the demonstrable clinical skills, as developed in the practicum, are not adequately tested by the examinations. In some cases, the credentialing process involves procedures which are not objective. Oral examinations, for example, have been criticized for their subjectivity.

There are noticeable and widespread efforts by examining boards to improve examinations in response to these deficiencies. A number of occupations are now undergoing the process of redefining the knowledge and skills necessary for entry level for each type of practitioner. The process is still imperfect, but it represents a step in the right direction. Limited attempts to use skill examinations on a broad scale have posed major implementation difficulties while not producing significantly different results. The difficulties which have been encountered indicate that much remains to be done to define and test for clinical competency.

(3) Changes in Medical Practice and Health Service Organization Are Not Reflected in Credentialing Mechanisms

Several factors contribute to the need for flexible means of keeping standards and examinations current. Among them are:

- The lag time required to gain acceptance of new techniques and methods of examination and to prove their worth
- Cumbersome processes to incorporate changes in curricula and credentialing standards which can result in delays of 5 to 15 years

Both accreditation and certification lag behind scientific and organizational advances which affect the actual competencies to be acquired. Accreditation standards have the additional problem of keeping up with educational advances, which may alter the process by which competencies are developed.

4. ORGANIZED MEDICINE HAS INFLUENCED THE DEVELOPMENT OF ACCREDITATION WHILE CERTIFICATION HAS BEEN MORE HEAVILY INFLUENCED BY THE PRACTITIONER IN THE VARIOUS OCCUPATIONS

Accreditation has developed with extensive physician involvement as a direct response to the need for more and better educational programs. Certification, on the other hand, which focuses on the practitioner, has been more influenced by the allied health professional associations and practitioners.

(1) Organized Medicine Has Played an Important Role in the Evolution of Allied Health Accreditation

The accreditation process which controls the educational programs in allied health has evolved similarly to medical education patterns which preceded it. Medical practitioners have been formally involved in the operation of accreditation since some allied health occupations decided to seek assistance from the AMA rather than operating independently. Formal collaboration with the AMA became the prevailing pattern during the 1930's.

Formal involvement of organized medicine in accreditation includes:

- Collaboration between medical specialty groups and related allied health groups in the development of standards as well as guidelines
- Approval by the AMA of the standards and guidelines
- Collaboration in program accreditation

Some disciplines and groups do not collaborate with the AMA. Such groups include:

- The American Dietetic Association
- American Medical Technologists
- International Society of Clinical Laboratories
- American Occupational Therapy Association (for occupational therapy assistants)
- American Physical Therapy Association (for physical therapy assistants)

(2) Organized Medicine Also Exerts Indirect Influences on Allied Health Licensure

Existing medical practice statutes have provided for laws governing licensure of allied health occupations. In some states, medical licensure boards are charged also to license related health professions. In addition, medical practitioners sit on health, occupational, and professional licensure boards. State medical associations and specialty groups have provided support for licensure enactment, a critical factor in some instances.

(3) Certification Has Evolved Primarily in Response to the Efforts of Allied Health Practitioners Through Their Associations

Allied health practitioners have been the primary instigators of certification under the aegis of professional associations. Through their representation in their respective associations, practitioners also exert great influence on the composition and grading of certification examinations. Organized medicine has influenced certification, albeit to a lesser extent, of the allied health occupation.

Many professional associations use professional testing services to assist in development and administration of the certification examinations. However, committees supervise such services and generally have the final word on the inclusion or exclusion of particular test items and on what shall be considered a passing grade.

5. CONCERN WITH QUALITY AND RESPONSIVENESS HAS RESULTED IN WIDESPREAD REEXAMINATION OF CURRENT APPROACHES TO CREDENTIALING

Concern with the quality and responsiveness of health manpower development has engendered a variety of reactions from practitioners, health care institutions, third-party payers, and government. Recognition of problems involved in credentialing is quite widespread, as evidenced by current literature and as further borne out by many experts. A number of public and private organizations which are important to allied health credentialing have issued preliminary statements of their concerns about important credentialing issues.

(1) Greater Health Care Agency Involvement in Clinical Education Is Requiring Review of Traditional Approaches

Many hospitals and other health care agencies are providing clinical education for the first time as sponsoring educational institutions look for new clinical sites. At the same time, health care agencies are subject to new or more severe pressure to modify the nature and extent of their participation. These pressures stem from internal operating requirements of the health care agencies, which in some cases have necessitated decreases in numbers of students accepted or reduced length of affiliation.

The requirement to grant priority to patient care over training objectives makes it difficult for sponsoring institutions to structure their programs within current credentialing mechanisms. Financial pressures are also an important constraint on the involvement of health care agencies in clinical education. As a result, efforts are being made to revise credentialing requirements to allow clinical training to be conducted in types of health care agencies which have not traditionally been used for clinical training.

(2) Government and Professional Associations Have Contributed to a Variety of Formal Studies

Studies at the national level are directed to broad issues important to credentialing and clinical education. Among recent studies and activities are:

- Regional institutes for allied health educators conducted by the Association of State Colleges and Universities and ASAHP under the sponsorship of the Bureau of Health Resources Development, HRA
- "State-of-the-Art in Core Curriculum" directed by C. Burnett under ASAHP auspices and funded by the Bureau of Health Resources Development, HRA
- Study of Accreditation of Selected Health Educational Programs, co-sponsored by the American Society of Allied Health Professions, the Council on Medical Education of the American Medical Association, and the National Commission on Accrediting, with funding from The Commonwealth Fund

- Study on the Feasibility of Establishing a National System of Certification for Health Personnel, conducted by the Institute for Public Administration and Robert R. Nathan Associates and funded by the Bureau of Health Resources Development, HRA
- Health Personnel Credentialing Study, conducted by Dr. W. R. Tucker of Rush Presbyterian-St. Luke's Medical Center, Chicago, and funded by the U. S. Public Health Service
- Nathan B. Hershey's research and publications on institutional licensure
- The "Neuman Report"--report of a special task force to the Secretary of HEW on "National Policy and Higher Education"

Other important studies and activities are noted in Volume IV.

(3) Recent Changes in Accreditation Standards and Organizations Are Aimed at Improving Clinical Education

A number of disciplines have revised accreditation standards and guidelines within the past two years. Revisions include:*

- Medical technology, which recognized the need and provides for flexibility in clinical education operated by educational institutions. The new essentials also encourage integration between program components and between the didactic and practicum modes.

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*The standards for physical therapy and physical therapy assistant programs recently have been completely revised. The proposed standards are expressed in terms of competency objectives; the guidelines also reflect this emphasis. Approved by the membership, they are now undergoing the AMA review and approval process.

- Dietetics, which provides for integration of nonclinical and clinical education in undergraduate programs based on generalized guidelines as to objectives and purpose.
- Occupational therapy, which provides for increased integration as well as flexibility in the use of various educational settings.

Recent developments related to the organization and operation of accreditation also suggest change. These developments include:

- The joint and individual efforts of the AMA, AHA, and ASAHP to develop collaborative forums and processes which would foster:
  - Appropriate representation of necessary expertise and interests
  - Greater responsiveness to the needs of individual occupations and the public
  - Increased flexibility to accommodate differences in programs and clinical settings
  - Emphasis on competency as reflected in the provisions for describing job functions in the recommended AMA format for essentials
- The emphasis of the National Commission on Accrediting and the Federation of Regional Accrediting Commissions of Higher Education on strengthening their organizations and capabilities while continuing to explore coordination*

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*A merger of these two organizations is scheduled to take place prior to January 1, 1975. The proposed title of the organization is the Council on Postsecondary Accreditation.

- The review by the Office of Education of collaborative accreditation of allied health education under its legislative mandate to periodically evaluate bodies empowered to accredit educational programs and its study of voluntary accreditation and its relationship to public functions being conducted by the Brookings Institution

- Professional association emphasis on improvement of accreditation processes, including:
  - Greater attention to the education and experience of participants on accreditation survey teams
  - Provisions for training potential members of of survey teams
  - Initiation of interdisciplinary site visit teams
  - Interest in educational objectives

(4) Traditional Approaches to Credentialing Individuals Are Being Reexamined and Revised

Many revisions are occurring in credentialing as applicable to individuals. Educational institutions are increasingly willing to grant credit on bases other than course completion. Increased acceptance of the results of the College Level Examination Program (CLEP)* is indicative of this trend. The expansion in CLEP to 5 general examinations and 34 specialty areas is another indicator. Four course credit examinations specifically applicable to the medical laboratory field are now in use. The inauguration of an external degree granting program by the State University of New York also is indicative of this growing liberalization. For example, medical laboratory technicians may earn a degree rather than a maximum number of credits if they fulfill experience prerequisites and/or specially designed examinations.

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*This program, designed by the Educational Testing Service and administered by the College Entrance Examination Board, permits individuals to establish their mastery of subject matter through specially designed tests. The CLEP results are usually used by educational institutions to grant different amounts of credit, although equivalency testing also may be used as a substitute for educational prerequisites.

Individual allied health programs also are turning to challenge and validation examinations in increasing numbers. These examinations permit students to demonstrate clinical competencies and receive credit for the associated courses. Both practical and oral examinations are being used.

Efforts at the national level to develop equivalency and proficiency examinations as alternatives to current requirements for certification and licensure (which are granted principally on the basis of formal educational achievement) are of more far-reaching significance. These efforts complement limited efforts at the state level to eliminate requirements not directly related to competency and to improve opportunities for personal mobility. Specific examination development efforts have been launched by professional associations primarily under government sponsorship. Other government-funded research to develop meaningful definitions of tasks and performance standards also has potential for evaluating proficiency. Work has been done in the fields of respiratory therapy, radiologic technology, occupational therapy, medical records administration, and physician assisting. The government also in some cases is sponsoring development of proficiency examinations for its own use in certifying health care practitioners under Medicare and Medicaid provisions.

6. CURRENT APPROACHES TO IMPROVE CREDENTIALING ARE FACED WITH BASIC DEFINITIONAL PROBLEMS

The primary purpose of credentialing is to assure that programs and individuals have met predetermined standards of quality. Quality must be defined before this determination can be made. Meaningful definition of the knowledge, skills, and attitudes required of allied health practitioners is particularly essential in light of the trend to eliminate quantitative requirements. Accreditation is also confronted with the difficulty of identifying meaningful measures other than quantitative indicators. In this case, educational program quality has to be determined.

Practitioners currently provide the primary input for certification and licensure exams. A major reason for this approach is that objective definitions of competency are not readily available, therefore, individual practitioner opinions are considered the best source of information on the capabilities required for allied health workers. However, even rigorous processing by professional testing services cannot eliminate the essentially subjective nature of the testing examinations.

Numerous attempts have been made to define the attributes of quality of education without resort to such factors as facilities, faculty qualifications, student-teacher ratios, and enrollments. These efforts have encountered manifold difficulties, including the following:

- Limited utility of the results due to:
    - Unsuitability of methodologies for application across settings, fields, and/or subject areas
    - Cumbersomeness of the methodologies
    - Difficulty of proving the validity of criteria
- Lack of acceptance
- Prohibitive cost

These difficulties have plagued efforts at definition by independent researchers. Similar fates have attended the attempts of accrediting groups, including the massive effort by the North

Central Regional Accrediting Commission.* However, this study did stimulate adaptation of broader standards than number of course hours. This lack of success and cost constraints have inhibited subsequent large-scale attempts to define educational quality. The educational input-output study by the Western Interstate Commission for Higher Education and the Ash effort in technical postsecondary education have implications in this area.**

7. NARROW PROFESSIONAL INTERESTS HAVE HAD UNDUE INFLUENCE ON ACCREDITATION STANDARDS AND CERTIFICATION REQUIREMENTS

The responsibility for accreditation and certification is usually vested, in allied health occupations, in an organization especially created for that purpose. These organizations usually have provision for representation of a variety of points of view including medicine, administration (the employer), and education. Nevertheless, many thoughtful observers feel that the professional association, with its inevitable biases, exerts overwhelming influence on the requirements and standards in force. In many cases, as a result, credentialing appears to work to the advantage of the established professional and to the disadvantage of the educator, the student, and the employer, who seek a more relevant and more flexible set of criteria for education and for practice.

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*"Proposed New Basis for Accrediting of Higher Institutions," North Central Association Quarterly, 8 (April 1934, pp. 419-424).

**Western Interstate Commission for Higher Education, Inventory of Educational Outcomes and Activities, Boulder, Colorado, WICHE, 1971; and L. C. Ash, H. Kempfer, and M. McNeil, Instruments and Procedures for the Evaluation of Vocational and Technical Institutions and Programs, American Vocational Association, Washington, D. C., 1971 (pilot test edition).

The professional associations make limited provision for soliciting inputs from, or including, nonmembers such as general educators, employers, and the public in the development and revision of standards and guidelines.* Educational program personnel indicate a pronounced desire for greater participation by these groups.

8. ACCREDITATION STANDARDS ARE FREQUENTLY APPLIED INCONSISTENTLY AND SUBJECTIVELY TO CLINICAL EDUCATION

The adequacy of allied health specialized program accreditation processes has been widely questioned by individuals, programs, and associations. The most recent formal exposition of process-related questions and issues is the SASHEP report.** The findings of that effort regarding process deficiencies also apply specifically to clinical education. For example, site visit evaluations are seen to be inadequate in the following respects:

- Procedures for site visit evaluations are vague and not always followed.

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*Study of the Accreditation of Selected Allied Health Programs.

**Ibid.

- Team members may be unfamiliar with instructional strategies and therefore unable to evaluate them properly.
- Team members are not prepared to provide consultation.

As a result, standards and guidelines are inconsistently applied to the clinical practicum.

9. EFFORTS TO ESTABLISH CREDENTIALING FOR CONTINUING EDUCATION ARE HINDERED BY LACK OF DEFINITIONS OF COMPETENCY

The view that allied health practitioners can maintain current competency merely through on-the-job experiences and their own efforts is changing drastically. The interest in organized continuing education is related to a number of developments, including:

- Increased recognition of the need for proficiency to meet requirements imposed by health agency accountability for care and services provided
- Advances in medical science and technology and organization which should be reflected in current practice
- Drive for higher status by allied health occupations which necessitates further development of members through continuous advanced training
- Recognition of the relationship between career mobility and the necessity for continuing education
- Movement by many associations toward recertification and relicensure

A number of professional associations are considering establishment of recertification, with competency to be demonstrated by continuing education. A requirement of 75 clock-hours of approved continuing education in 5 years has been established for dietitian recertification. Other associations have established guidelines for continuing education. In general, efforts are stymied by difficulties in defining the "core" of competency that can be required of practitioners, considering their varied assignments.

Problems include the difficulties associated with organizing and providing structured clinical education on a continuing basis. Limited efforts to date to define, develop, and implement structured continuing education experiences are indicative of these difficulties. They also reflect a more basic drawback: the general lack of attention to continuing education for allied health workers by many health care agencies, educational institutions, and other groups. An underlying cause of this situation has been the failure to clarify responsibilities for the provision of continuing clinical education. Health care agencies, particularly small rural ones, have problems related to the cost of providing continuing education (either in-house or elsewhere) and their ability to attract qualified faculty.

This chapter has reviewed the important role of credentialing in clinical education and the utilization of allied health manpower. The remainder of this chapter is devoted to the exposition of several recommendations which are designed to increase effectiveness of credentialing in the allied health occupations.

RECOMMENDED ACTION

10. ACCREDITATION STANDARDS SHOULD BE DIRECTLY AND EXPLICITLY RELATED TO ACCEPTED CLINICAL EDUCATION OBJECTIVES

Recommendations of this study directed toward credentialing of allied health clinical education are based on three premises:

- Clear identification of the desired outcomes of clinical education in terms of practitioner development is a fundamental prerequisite to accreditation.
- Licensure should be restricted to the minimum levels necessary to protect the health and safety of the public.
- Accreditation and certification, respectively, should distinguish between basic competency and higher levels of proficiency.

Accreditation should distinguish between what is minimal and essential for basic competency and that which is a higher level of proficiency. Standards and guidelines for specialized program accreditation should provide specific objectives for clinical education. The objectives should be agreed upon by the various parties interested in the clinical education process. Responsibility for developing measures of achievement of the defined objectives, and for program evaluation, should not rest completely with those who establish the educational objectives. Program evaluation measures associated with standards and guidelines should be developed and applied by allied health professional associations and experts in evaluation.*

Objectives should be written in terms of demonstrable competencies and should embrace or imply outcomes (behavior desired of students) that are specific and unequivocal. Therefore, they should be stated in terms of performances that indicate achievement of all required knowledge, skills, attitudes, and judgment. A series of objectives will be needed to cover the different classes of knowledge, skills, etc. In each case, conditions critical to performance should be identified. For example, communication with patients may be more critical in some occupations than others.

11. SYSTEMATIC METHODS FOR EVALUATING THE ACHIEVEMENT OF RELEVANT INDIVIDUAL COMPETENCY SHOULD BE DEVELOPED

Systematic evaluation of individual achievement of competency is a logical step following a systematic approach to the definition and development of requisite competencies and related content, discussed in the previous chapter. In order to achieve this step, both HRA and the professions should give their attention and support to the development of adequate definitions of competency and the means to test for or measure competency.

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*Position statements from selected major health, educational, and professional organizations are presented in Appendix E.

All measures used by educational programs to evaluate individual students should be systematically related to educational objectives and, therefore, to competency. Several validation measures should be applied, since techniques vary in reliability and ability to capture particular competencies. Programs should be encouraged to use oral and practical examinations to evaluate their students. The experience of individual programs should provide additional input to national efforts to develop standards, which should be intensified and expanded.

In addition, evaluation by programs should be performed in stages related to development of specific competencies as the student progresses through clinical education. Periodic evaluation will enhance efficiency and flexibility, since student readiness for clinical education can be established more easily.

Selection of measures to determine final competency and their administration merit special consideration. Many allied health students finish their education in distant and dispersed settings, with little more than informal evaluation of achievement while in these settings. Mechanisms should be available to ensure that the outcomes established by the program have been achieved by the student. Instructor familiarity with program objectives provides one approach. Use of procedures that involve both educational faculty and clinical instructors is another which should be explored.

12. CREDENTIALING MECHANISMS SHOULD BE MORE RESPONSIVE TO CHANGES IN HEALTH AND TECHNOLOGY

Criteria governing the granting of credentials should be responsive to changes. Improvements in educational or technological approaches to the provision of clinical learning need to be recognized and incorporated into standards, guidelines, and requirements of accreditation, certification, and licensure.

(1) Professional Associations Should Continue To Reassess the Credentialing Mechanisms With Which They Are Involved

Current revision procedures, as conducted by national professional associations, should be streamlined. This would allow more rapid and frequent revision of standards to meet changing needs.

Program accreditation standards, while continuing to be specific enough to provide some national uniformity and to assure maintenance of minimal standards, should be flexible enough to allow programs to adapt to local requirements and to experiment with various educational methodologies. Accreditation guidelines should suggest alternative ways in which standards can be met. Innovative programs granted provisional approval should be reevaluated for full approval as early as feasible. The guidelines should be reviewed and updated at regular intervals.

(2) The Goals of Certification and Licensure Should Be Fully Integrated With Those for Accreditation, Lest Clinical Education Be Forced To Serve Multiple Masters

Both accreditation and certification have an influence on clinical education. Because of this influence, albeit indirect from certification, it is important that the goals of both be directed to a single purpose, that is, the development of a competent practitioner. Frequent reevaluations should assure that conflicts between goals are resolved before detrimental effects are felt.

Certification and licensure mechanisms should also be responsive to change and alternative approaches in clinical education. Without this responsiveness and flexibility, new approaches initiated by educational programs or employers are in vain. Program directors, employers, and individuals who seek certification should not be constrained unduly from innovations by restrictions in certification or licensure requirements. Boards should be sensitive to these needs when establishing and revising certification and licensure requirements. Organizations relying on practitioner certification or licensure as an indication of competency should also be sensitive to the responsiveness of these functions.

A related question which bears consideration is the need for two voluntary mechanisms--accreditation and certification--to achieve the goal of practitioner competency. Serious analysis should be undertaken to search for possible redundancy between these two credentialing mechanisms. This could be achieved by a formal study to identify unnecessary overlapping of functions. Differences between occupations would probably require that each occupation be considered separately within the study.

(3) Means Should Be Established for the Participation of Related Practitioners and Other Parties in Credentialing

In order to respond to changes in health care organization and delivery, credentialing processes should include provisions for the participation of related practitioners in associated occupations in appropriate activities, such as revision of standards and site visits. The credentialing goal of competency sufficient to protect the health and safety of the public warrants inclusion of employers and representatives of that public.

The American Medical Association and the American Hospital Association, in conjunction with the American Society of Allied Health Professions, should expedite their efforts to establish coordinated collaboration mechanisms for credentialing. These procedures should reflect present and future directions in allied health. They should provide for maximum discretion while encouraging recognition of commonalities. Government should support and sponsor these efforts, preferably through the associations.

13. SPECIALIZED ACCREDITATION SHOULD DIRECT MORE ATTENTION TO CLINICAL EDUCATION

The crucial portion of allied health education programs in preparing competent practitioners is the clinical experience. As such, clinical education should receive prominent attention in specialized accreditation as it does in the clinical laboratory and X-ray technology.

(1) Clinical Education Should Be Emphasized in Accreditation Standards and Guidelines

Standards and guidelines for program accreditation, issued by professional associations, should emphasize clinical education. Some occupations are deficient in this area and have a great need for this increased emphasis on the practicum. Specifically, the content and skills required in the practicum should receive at least as much attention as education requirements.

The essentials and guidelines should include more explicit references to clinical education objectives, clinical curriculum and content, and clinical faculty and facilities--in short, all the categories now covered generally in standards and guidelines.

(2) Accreditation Requirements Should Be Revised Where Necessary To Permit and Encourage Maximum Integration of Didactic and Clinical Education

Programs should be required to describe how they correlate academic or didactic with clinical education. This requirement should be reflected in the guidelines. The resulting attention given to integrating the general and clinical components should provide more meaningful and better coordinated educational programs.

(3) Clinical Education Should Be Given Greater Emphasis in Accreditation Site Visits

Current attention on accreditation site visits varies by occupation in its emphasis on the practicum. Taking into consideration current restrictions--finances, time involved, distances, number of affiliates--on accreditation teams, means should be explored to increase in many of the allied health occupations the weight given to the quality of clinical education being provided. Again, the clinical laboratory is an example where this is being done. Visits to sites providing practicum should be encouraged. One means to increase affiliate coverage is the use of multi-discipline site teams for less accessible locales. These teams could evaluate all allied health clinical education within assigned health agencies. Other means might include requests to hospital accreditation teams for special attention to educational programs or arrangements for nearby programs to visit clinical institutions affiliated with distant sponsors.

(4) Provisions by Professional Associations for Clinical Education Consultation Should Be Reinforced Substantially

Professional associations should increase consulting services to programs from the national level. These services should be provided on a regular basis to all programs. Their focus should be on improving clinical education, given the present pattern of participating institutions, available resources, and the state-of-the-art.

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The impact of accreditation, certification, and licensure on clinical education is important and sometimes problematical. Most of the problems are already being attacked or at least addressed by others. Improvements in the way credentialing affects clinical education can be achieved by better definition of objectives and competencies and strengthened systems for evaluation of program and individual achievement.

V. THE MANAGEMENT OF CLINICAL EDUCATION

This section of the report considers the management of clinical education, the effectiveness with which educational institutions and health service institutions work together toward the attainment of their joint goals in the clinical education of allied health manpower. In order to review and assess the general quality of management of clinical education, the several processes which comprise management will be considered separately as they are carried out in the conduct of clinical education. As the education of allied health manpower has moved from the health service institution to the educational institution, the task of managing the clinical education component has become more difficult and complex. The first part of this chapter describes the present situation, with emphasis on the major problems which exist. The chapter concludes with suggested solutions for these problems.

PRESENT ISSUES AND PROBLEMS

1. ALTHOUGH HOSPITAL SPONSORSHIP OF ALLIED HEALTH MANPOWER EDUCATION PROGRAMS IS DECLINING, MOST CLINICAL EDUCATION IS STILL PROVIDED IN HOSPITAL AND RELATED INSTITUTIONS

In response to increasing difficulties, many hospitals have relinquished their sponsorship role of allied health manpower education programs. Educational institutions have increasingly accepted this sponsorship role. It is important to emphasize, however, that many hospitals sponsor such programs. About 85% of AMA accredited allied health education programs are accredited to the health care agency. Of course, the vast majority of clinical education of allied health manpower is provided in hospitals and other types of health care institution.

The objectives and the resource requirements of high-quality clinical education are the same whether the total program is sponsored by a single agency, e.g., a hospital, or whether the academic and clinical phases are conducted by two separate agencies. Management required to ensure that such programs are conducted effectively and efficiently is the same under single agency or multiple agency involvement except that where two or more agencies are involved the task of coordination becomes much more difficult and the question of accountability becomes a major issue. Thus, the discussion of managing clinical education which appears in the remainder of this chapter applies to both patterns of organization. Special emphasis is directed toward problems of coordination and accountability when two or more agencies are involved.

(1) Economic as Well as Other Factors Have Influenced Hospitals To Give Up Their Sponsorship Role in Allied Health Education

Beginning in the late 1950's, hospitals began experiencing major problems in the conduct of allied health manpower educational programs. A number of factors contributed to the development of these problems:

- Economic factors
    - High cost resulting from low student-teacher ratios
    - Mounting public pressure to keep costs down
    - Most other education was tax-supported
- Requirements for qualified instructional staff
    - Attracting qualified staff
    - Retaining qualified staff
- Inability to give academic credit
- Difficulties in recruiting because of competition from colleges for good students

- Requirements for adequate facilities
  - Clinical spaces
  - Classroom and laboratory space
  - Student housing, study, and recreation facilities

These factors have contributed in large part to the trend away from hospital-based allied health manpower education programs and continue to influence this trend today. It is important to note that hospitals got into education to meet their own needs for personnel. They have functioned as educator and employer. As the role of educator became more difficult to fulfill and as other sponsors became available, hospitals abandoned their sponsoring role in allied health manpower education to a large extent. However, hospitals are still major employers of allied health manpower, and, as such, have changed their role to that of maintaining critical surveillance over the academic institution as it prepares this manpower.

(2) Employers Have Exerted Continuing Strong Demands for Qualified Manpower To Man a Rapidly Growing Industry

The rapid growth in the nation's health care industry in terms of size and technological complexity has been well documented. Increasing demands for health and medical care resulted in demands for greater numbers of qualified health workers including more highly specialized professionals. Health care providers turned to educational institutions to meet specific manpower shortages.

(3) More Recently, Students Have Demanded Admittance to the Allied Health Fields in Ever-Increasing Numbers

Student applications for and enrollment in allied health educational programs have increased very rapidly in recent years. Student demand for entry into allied health has often exceeded that for any other occupational field. A number of schools have reported that qualified applicants outnumbered available student spaces by over four to one. One midwestern school has resorted to a lottery system among qualified applicants to ensure that those qualified have an equal chance of admission.

Educators cite several reasons for the increased student demand to enter allied health:

- The recent economic slump and the inability of many well trained professionals in a number of fields such as engineering and teaching to find suitable employment in their respective fields.

- The public service motive has been given much greater emphasis during the past decade.
- An apparent decline in the value and importance of academic credentials among the young people of college age. Many students appear to be more concerned about finding a career field in which the pre-entry educational period is relatively short and the prospects for steady employment are higher than they are in receiving a baccalaureate or graduate academic degree.

This great increase in student demand could not have been accommodated solely in our hospital and other health care institutionally based programs. Thus this increased demand was focused largely upon our academic institutions.

2. STRONG SUPPORT FOR THE DEVELOPMENT OF ALLIED HEALTH EDUCATION HAS COME FROM WITHIN THE EDUCATIONAL SECTOR ITSELF AND FROM GOVERNMENT

The demand for allied health education, which came from hospitals wanting to get out of the education business, hospitals and other health care providers as employers, and students, generated ready response throughout the education sector. Government support was readily activated because of government's historical support of education and increasing public pressure to meet the health "needs" of the nation.

(1) Allied Health Education Presented an Attractive Opportunity to the Burgeoning Junior College Movement as Well as to Many Four-Year Colleges and Universities

Two developments in post-secondary education during the past two decades have had significant impact on allied health education:

- The junior college/community college movement which developed rapidly during the 1950's and 1960's was eager to identify new program areas to sustain its continued growth. The opportunities in allied health were considered highly attractive because of the already existing student demand and the seemingly limitless number of occupations which existed or were being established. The figures presented in Exhibit IV, following page 8, attest to the rapid response by junior and community colleges as they entered the field of allied health.
- The establishment of medical education centers in many of our larger universities also provided strong support for the development of allied health education. In order to provide a comprehensive educational program in health and medical care, it was necessary and desirable, from the standpoint of many health and medical educators, to include the allied health occupations. In many centers allied health exists along with medicine, nursing, and dentistry, although not always necessarily with equal status.

(2) Government Support Was a Significant Factor in the Development of Allied Health Education

State and local governments have provided financial support for education for almost a century in the case of post-secondary education and since about the turn of the century for elementary and secondary education.

Direct Federal support for education began over a century ago. Having already established a pattern of financial support for physician and nurse education, in 1966 the Federal Government enacted legislation to provide financial support for the allied health occupations. Grants were made available to educational programs, and financial assistance was provided to students. Thus, the Federal Government provided a major impetus to the development of allied health programs in our academic institutions.

It should also be pointed out that vocation-technical education at the pre- and post-secondary level grew rapidly after World War II, largely to meet the training needs of the returning veteran population. Vocational-technical education has received financial support from Federal, state, and local government. In recent years, it appears that the pattern which has evolved has been that of increased state and local government financing.

Allied health education has been given increasing emphasis in vocation-technical schools in recent years to meet the demand of students who did not wish to pursue academic study. In many state systems, the allied health programs make up a significant part of the total vocational-technical offering.

3. ALTHOUGH CLINICAL EDUCATION IS CONSIDERED ESSENTIAL, IT IS POORLY MANAGED

There is a general consensus among the professionals, both educators and practitioners, within the various allied health professions that allied health students must receive part of their basic education in a clinical setting where they can learn by doing. This conviction is held by most other health professionals including physicians and nurses. The rationality and applicability of the physician education model for the education of most other health professions is accepted without question. If one considers the way in which most clinical education is conducted today, given the claim of its essentiality, one can easily conclude that there must be some intuitive faith that just doing it will achieve the desired results because of its unquestioned necessity.

In view of the unsatisfactory way in which much of clinical education is managed, the inference can be made that its quality is unsatisfactory. This raises the question as to just how essential clinical education is if it is conducted as it is at present. How can we justify the continued expenditure of such a high volume of scarce resources, including student time and effort, in a phase of education which is so ineffectively handled? Justification of this continued use of resources will require much better conduct of clinical education and rigorous evaluation of the outcome of this phase of the total curriculum.

4. PLANNING FOR ALLIED HEALTH EDUCATION CONTINUES TO BE UNEVEN

It appears that planning for allied health education, which has always been elementary and short-range, continues to be carried out at a rudimentary level. Planning has been inadequate in the past and is increasingly so in view of the greater complexity of allied health education. Formerly, when a hospital faced a shortage of qualified personnel in a given occupation within its labor market, it drew upon its own resources, augmented in some cases by local resources, to develop a program to educate students in that occupation. This type of planning was simple and straightforward, based upon a recognized manpower need. It was short-range because the program could generally be discontinued, should the need be met, as easily as it had been started. Now, despite much emphasis on health program and facility planning at the state and area level, little has been accomplished by allied health manpower planning that is more fundamental than the old institutional approach.

The shift of allied health education to the educational institution requires more sophisticated and long-range planning. The educator is no longer also the employer, and the clinical education phase of many allied health programs is now provided outside of the sponsoring institution.

(1) Manpower Needs Are a Major Factor in Allied Health Program Planning Today

In the past, allied health manpower education programs did emerge to meet real needs, as these needs were determined on a local or, sometimes, area-wide basis. The investigation of employment opportunities in the long term was limited. Crisis production geared to provide a short-term payoff was a prevailing mode. There was little if any concern over the cost-effectiveness of this approach to health manpower education.

This approach has been largely abandoned at the present time. Educators today are increasingly concerned about the cost-effectiveness of existing and proposed programs under the pressure of increasing educational costs and the insistence by state legislatures for greater efficiency and economy.

Vocational-technical schools offering allied health programs of two years or less have been especially rigorous in documenting the demand or need for such manpower as the basis for program establishment and/or continuation. Officials in several state vocational-technical education departments describe their obligation as being twofold:

- To the profession and students, not to overtrain
- To the public, to train enough practitioners to meet their needs

(2) Lack of Information Impedes Long-Range Planning

It appears that planning for allied health education is still based for the most part on subjective assessment of manpower needs, with little knowledge of actual economic demand for manpower. Comprehensive and accurate information on the current output, supply, utilization, and mobility of allied health manpower on a state or regional basis is unavailable. Without baseline information, planning is restricted to the immediate and short-term future. The analysis of future manpower requirements, as a basis for projecting long term needs, has not progressed beyond the stage of arguments over methodology.

(3) The Burden of Planning for Allied Health Manpower Education Has Shifted From Hospitals to Educational Institutions

In recent years, hospitals have quite willingly transferred the job of allied health education to the educational arena. They have also detached themselves from the manpower planning process while moving to become free of institutional responsibility for providing leadership in allied health education.

As a result, educational institutions moving into allied health have had to exercise sole leadership in planning and organizing allied health programs. The lack of health care provider involvement in the planning process has been a serious limiting factor in some areas. Also, the geographically broader interests and responsibilities of educational institutions (as opposed to hospitals) impose new demands on the planning process.

(4) Health Practitioners Have Had Insufficient Involvement in Planning for Allied Health

Active health practitioners have little involvement in the planning which creates the structure of allied health education and the clinical education component of these programs. As programs move into educational institutions, there is less and less of this type of involvement. Educators in educational institutions assume the tasks of establishing objectives, content, and curricula, adapting standards, and formulating measures of success. These educators are most often practitioners who have moved into this functional role.

The absence of adequate input from practitioners in the field can be attributed to the lack of an effective mechanism to build in this participation and, to a lesser extent, to a reluctance on the part of these practitioners to seek this level of direct involvement. The same can be said for hospitals and other health care providers.

5. PLANNING FOR THE CLINICAL EDUCATION PHASE IN ALLIED HEALTH PROGRAMS HAS HAD LOW PRIORITY

While planning for the development and operation of allied health education programs in their entirety has been uneven, planning for the clinical education component of these programs has been given even less attention and is, in reality, largely nonexistent.

(1) Generally, the Objectives of the Clinical Education Component Are Undefined

Despite the importance of clearly spelling out the objectives of a proposed program or activity to give it a sense of direction, clinical education objectives are rarely, if ever, precisely stated. In general, the objectives of the practicum are not clearly defined nor understood by the sponsoring health care or educational institution. The same is true for the affiliating health care institution in which the practicum is provided. This impairs the operation and the control of clinical education.

Without a definite sense of direction and purpose as spelled out in the objectives, the task of defining curriculum content, determining instructional methods, and evaluating program effectiveness which is carried out by the program sponsor becomes largely subjective and imprecise. In cases where the academic and practicum phases are provided by different agencies, the health care institution affiliating to provide the practicum finds it extremely difficult to correctly interpret its role in the total educational continuum. Effective allocation of its resources for the conduct of the practicum is necessarily impaired. Self-evaluation and corrective action for other than the most obvious problems are of questionable validity at best.

(2) Provision for Clinical Education Is Often Inadequately Carried Out in the Planning Process

Since the objectives of clinical education are rarely thoroughly defined, it is not surprising that provision for the practicum receives only limited attention in program planning. This is true for programs in which the health care agency sponsors and conducts the total program as well as for programs in which the sponsor is an educational agency which affiliates with a health care provider for the practicum phase of its program. While available information indicates that in most such cases potential affiliations are identified and frequently appraised prior to establishment of a program, the conditions to be met by all parties under the affiliation are formally established after the program is in operation.

Although educational institutions have a number of methods with which they assess the educational capacity of a potential clinical affiliate, this assessment is often more intuitive than rational. (Of course, in many cases the clinical affiliate already has a known and approved clinical educational capacity by having been a program sponsor and/or actually being accredited for conduct of the practicum.) In situations where the clinical affiliate does not have a known and accepted capacity to conduct clinical education, attempts by the sponsoring institution to obtain the basic information to assess the capability of the potential affiliate and plan the program in accordance with this assessment are often inadequate.

6. PRESENT ORGANIZATION OF CLINICAL EDUCATION DOES NOT PROVIDE A STRONG MANAGEMENT STRUCTURE

The present patterns of organization of the clinical education component in allied health manpower programs indicate several major weaknesses.

(1) Organizational Provision To Support Clinical Education Within Health Care Institutions Is at an Embryonic Stage of Development

The organization pattern in an individual institution is associated with the size and prominence of the allied health programs in that institution. Most clinical training within hospitals and other health services facilities is organized on a departmental or service unit basis. Although organizational lines of authority run from the administrator to the department heads, this authority is rarely exercised with respect to clinical training.

Centralization of education and training programs in a single hospital department to facilitate management has had only limited development thus far. It is both a cause and a result of the present quality of management of clinical education. Failure to centralize all educational programs and activities in an institution under a single department results in a number of problems for clinical education, such as over- or under-utilization of the institution's capacity to provide high-quality clinical education, duplication of resources provided, and failure to achieve economy of scale to justify sufficient resource allocation.

(2) In Most Cases Where the Academic and Clinical Phases Are Conducted by Different Agencies, the Agencies Do Not Clearly Understand Their Respective Roles

The focus of responsibility for the clinical education component in an educational program in which this component is provided by an affiliating agency to the program sponsor is generally not clearly recognized by either.

Study findings indicate a failure of both parties in most affiliations to understand their respective roles in the cooperative endeavor. This is borne out by the fact that the division of labor which is effected is generally unclear. In the case of the more obvious tasks, the uncertainty arises because the assignment of all of these tasks is not clearly spelled out in the affiliation agreement, whether informal or formal. The result is that essential tasks may be overlooked or incompletely carried out. This is especially true, for example, in the conduct of evaluation activities and the initiation of corrective action. The more subtle aspects of the affiliation such as the focus of authority and control are more complex to deal with. Several underlying factors may partly account for the failure of the two institutions to come to grips with these sensitive issues.

- *The Shift of Allied Health Education From the Health Care Institution to the Educational Institution Has Not Been Complete*--While health care institutions have willingly supported the shift of primary responsibility for allied health education to the educational institution, there is strong indication that they have not been as willing to transfer full authority needed to do the job. This applies to individual health practitioners as well as their professional association. Strong feeling exists among many allied health educators and program directors interviewed during the study that the health professionals interfere in the effective education of allied health personnel. They feel that, while the health care institutions and professionals have been anxious to shift the burden of allied health education to the educational institution, they have been unwilling to give the educators the necessary authority to manage this education as they so choose.

- Many Health Care Institutions Fail To Distinguish Between Education and Service--There appears to be a basic misunderstanding by many health care institutions of the distinction between education and service. Many health care institutions still consider the student as a source of inexpensive labor. Education is given a secondary priority, as these health service agencies are largely motivated by self-gain to become involved in education. This is a direct carryover from a time when hospitals conducted their own education and training programs to meet their staffing requirements. Thus, education and training programs were conducted to support the provision of patient care, which was and continues to be the primary function of our health care institutions, with the exception of those which are directly involved in academic health centers.

- Educational Institutions Are Dependent on the Health Care Institution for the Clinical Education Phase--The educational institution does not clearly understand its role in the clinical education process, nor does it relate this role to its primary objectives. This is manifest in present patterns of conducting and financing clinical education. As long as clinical education is a required part of so many allied health curricula, the educational institutions sponsoring this education will be dependent upon health care institutions to provide the clinical setting. While education and training are important functions in many health care institutions, the fact remains that, except for our major health educational institutions, patient care is still their primary function.

  Recognizing their dependent status, many educational institutions are reluctant to make too many demands on the affiliating health care institution. Health care institutions are aware of their indispensable role in allied health education, which gives them considerable power or leverage in

> any affiliation. For this reason the issue of control becomes even more sensitive and may largely explain why the sponsoring educational institution most often fails to exercise the necessary control over the clinical education program.

(3) Most Agreements Between the Sponsoring Institution and the Affiliating Institution Have Had Limited Effect on the Actual Conduct of the Programs

The use of formal agreements between sponsors and affiliating institutions is a relatively recent development, encouraged mainly by the recommendations of professional associations, by the need for documentation regarding liability, and by the requirement for certain government funding. In some cases, these formal agreements are quite specific and are closely followed by both parties, thus really structuring the relationship. Study findings indicate, however, that in general the use of so-called formal agreements or contracts has done little more to better structure these relationships than the various informal arrangements utilized in the past because these agreements lack specificity.

In cases where there is no formal agreement, things may appear to function satisfactorily most of the time. When problems arise, however, solutions are difficult to arrive at because there are no established lines of authority or communication. Another problem with an informal arrangement is that the informal working agreement carries over into the clinical education program itself, which operates on a somewhat impersonal, unstructured basis.

A review of affiliation agreements from a number of major sponsoring institutions revealed only a small percentage which elaborated on specific aspects of the affiliation and the respective task assignments and responsibilities for each of the participants. *

The general nature of the contracts was as follows:

- Responsibilities of each institution are described in very general terms, and rarely is responsibility to the student recognized or acknowledged.
- Contract terms focus on the provision of facilities, supplies, and equipment related to the education program such as provision of student uniforms.
- There is a general lack of specification regarding:
    - Objectives
    - Supervision
    - Control mechanisms
    - Numbers of students
    - Evaluations
    - Counseling and placement

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*Although very little has been written on this subject in general, the findings reported in the following monograph corroborate our findings. Moore, Margaret L., et al, Form and Function of Written Agreements in the Clinical Education of Health Professionals.

This lack of definition appears to result from the following factors:

- Lack of clear understanding of contracts
- Legal complications associated with the missions and characteristics of health care agencies and educational institutions
- Difficulties encountered in the execution of very specific agreements
- Desire of both institutions to avoid specific commitments and accountability

It should be emphasized, however, that even when specificity is provided in the contract, actual practice does not always adhere to the contract terms. Specificity does not substitute for well understood intent. The most detailed operating guide will fail without positive support and without sufficient resources.

Hospital administrators tend to consider the formal contract as an essential basis for a satisfactory agreement. The general attitude was that, if anything goes wrong with the affiliation, such as the failure of the sponsoring institution to fulfill its obligation or problems involving the student, the hospital can use the contract as a basis for insisting on corrective action or, if necessary, for termination of the affiliation.

7. COORDINATION AND COMMUNICATION BETWEEN SPONSORING INSTITUTIONS AND AFFILIATED HEALTH CARE INSTITUTIONS ARE INADEQUATE

The problems of coordinating and ensuring necessary communication between the academic and clinical phases of an allied health curriculum are much less difficult to achieve when a single institution conducts both phases. For the most part, there appears to be little difficulty in these areas in most hospital based programs. These management functions become much more difficult to execute successfully when these two phases are performed by separate agencies.

Coordination of the activities of clinical education between a college and a hospital (the most common partners) is usually the responsibility of the program director in the college. Sometimes this person is assisted by a "clinical coordinator." In some cases coordination is maintained by instructors who accompany the students to the hospital. Many hospital personnel view this as a poor practice in that these people are not sufficiently familiar with the hospital and its internal operation.

The frequency and nature of the contact between the college and the hospital depend on the college facility staffing patterns, the relationships between the people involved in the two institutions, the number of hospitals affiliating with the college program, and the distances to the affiliates. Visits range from once a week to once a year. There appears to be no common pattern; however, the frequency and duration of this contact are generally considered inadequate.

A great number of people directly involved in clinical education affiliations from both the educational and the health care institutions expressed concern over the lack of adequate communication between the two institutions regarding the conduct of the clinical education program. Even in affiliations where frequent contact between the two institutions is maintained, the general consensus was that communication should be improved.

Deficiencies in communication and coordination most commonly cited include the following:

- Health care institutions that affiliate are not clear about what is expected from them in terms of type and extent of student exposure and facilities and equipment to be provided.
- Insufficient information about the content and curricula are given to the health care institution to assist its personnel in planning and maximizing their support of the student experience.
- Sponsoring institutions provide limited information on the experiences received by the students before they begin the clinical education phase.

The problems in coordination relate directly to questions of role, philosophy, and organization which were previously discussed and the failure to clearly define the tasks assigned to each institution.

8. EDUCATIONAL INSTITUTIONS DO NOT PROVIDE ADEQUATE DIRECTION OF THE CLINICAL EDUCATION PROGRAM

Direction of the routine activities in the conduct of the clinical education program is essential to ensure that the various activities and events are carried out as required. This is a difficult task within the health care institution because of the complex organization structure involved in the delivery of patient care. Many times this involves several different departments or management units, thereby increasing the problem of directing and coordinating activities. Direction of the clinical education program on a day-to-day basis is not strong and decisive enough to ensure optimum benefit to the student.

There are problems inherent in the fact that the instructor who comes from the educational institution to instruct and supervise the students in the clinical setting provided by the health care facility is not an employee of the health care facility. In a real sense, his or her authority to direct is quite limited, and the role becomes one of coordinating and expediting.

9. THE CONTROL OF THE CLINICAL EDUCATION PHASE IS INADEQUATE

The essence of "control" is action which adjusts performance to predetermined standards if deviations occur. In other words, control is the process of monitoring the conduct of a given enterprise or activity to determine whether or not progress is being made toward established goals and objectives and acting if necessary to correct any deviations. Based upon the allied health programs visited in the field and the broad interviewing conducted during the study, it appears quite evident that, in general, clinical education of allied health students is inadequately controlled.

The weakness of control over the manner in which clinical education is conducted is inevitable in view of the other widespread deficiencies in its management discussed earlier:

- In the absence of precise objectives, it is difficult to establish standards according to which control is exercised. This applies to clinical education in general so that it is just as applicable to the health care agency sponsored program as it is to the educational agency sponsored program.
- The feedback of information from the health care institution to the sponsoring institution is too limited and too infrequent to provide an accurate and timely report on the performance of the clinical education program. Thus, there is inadequate information available upon which to evaluate performance.

- Finally, even when performance is substandard, corrective action is infrequently taken by the sponsoring institution in the affiliation.
    - Requests from the sponsor to the health care institution for changes or improvements in various aspects of the clinical education phase are infrequent.
    - Terminations of affiliations tend to be infrequent. Even affiliations described as inferior by practitioner-educators are often continued to provide at least a modicum of clinical training. Circumstances cited as resulting in discontinuing the affiliation with a particular health care facility, in order of importance, include:
        - Lack of supervision
        - Continued assignments of students to busywork or housekeeping chores
        - Substandard quality of practice
        - Extensive personality conflict

      When a decision is made to discontinue use of a health care facility for training, it is rarely communicated to the facility in question; rather, students are no longer sent to this facility. In most cases, existing agreements are not altered.

Thus, within the very loose organizational structure within which the clinical education component of the allied health curriculum is increasingly conducted, inadequate control is applied to overcome unsatisfactory performance or any aspect of this component of the total curriculum which is below standard.

RECOMMENDED ACTION

The major problems discussed in this chapter pertain to the management of clinical education as it relates to the effectiveness and efficiency of allied health manpower training. The several recommendations presented below pertain to strengthening the management of this education phase.

10. PROVISION FOR CLINICAL EDUCATION SHOULD BE A MAJOR ELEMENT IN PLANNING AN ALLIED HEALTH EDUCATION PROGRAM

A basic step in improving the overall management and ultimately the quality of clinical education of allied health manpower is to ensure the availability of sufficient high-quality clinical education resources during the planning of any allied health education program. In order to provide the proper structure and management of the clinical education phase, the following is recommended:

- The educational institution which proposes to sponsor an allied health education program should take steps early in the basic planning process to assure that necessary resource information is available, including:
    - High-quality clinical education resources
    - Methods to assess quality of clinical affiliates
    - Estimated cost of clinical educational affiliation
    - Sources of funds to finance cost of clinical education

- The hospital or other health care agency which proposes to sponsor an allied health education program should conduct a critical self-evaluation early in the planning process to ensure that it has the capacity to conduct such a program and that the program will be given the proper support necessary for it to become a high-quality educational program.

- The final decision to establish a new allied health educational program should be based on a positive finding regarding the availability of sufficient high-quality clinical education resources.

- Planning of the clinical education should be conducted concomitantly with the total program or curriculum planning and should be an integral part of this total planning effort.

- Where applicable, potential affiliating health care institutions should be involved throughout the clinical education planning process.

These recommendations are designed to give the clinical education component a higher priority in the total educational program by including it in the early planning stages. Where program sponsors must use outside clinical agencies, these agencies should be involved in the planning process in order to provide the basis for a closer working relationship. Obtaining direct input from the institution in which the clinical education will be conducted makes the planning much more realistic and effective.

11. OBJECTIVES FOR CLINICAL EDUCATION SHOULD BE CLEARLY ESTABLISHED

As part of the planning process, the philosophy, goals, and objectives for the clinical education phase should be clearly established, as discussed in Chapter III. These objectives should be spelled out in operational terms and should specify what is to be accomplished during the clinical education period related to:

- Job performance at entry level
- Existing requirements, if any, for credentialing or licensure
- Special student populations and problems
- Career growth and progression including vertical and lateral mobility

This step is essential to the conduct of effective clinical education and should be carried out by the program sponsor and, when affiliations are used, should be clearly communicated to the affiliating agency.

12. PUBLIC ACCOUNTABILITY FOR THE CLINICAL EDUCATION COMPONENT SHOULD BE ACCEPTED BY THE SPONSORING INSTITUTION

The responsibility for the clinical education component of a program should rest with the sponsoring institution. The sponsor of an educational program is accountable to the students it accepts, to its affiliating clinical institutions (if used), to the employers of its graduates, and to the general public for the effective and efficient conduct of that program. The focus of this responsibility should be clearly recognized and accepted by the sponsoring institution and its clinical affiliates if such are used.

An educational program sponsor has a moral obligation to its students. If public monies are utilized, public accountability must also be provided. Furthermore, when an institution awards a diploma or a degree, it is attesting that the recipient has completed a prescribed course of study and satisfactorily completed all requirements. Thus, the sponsoring or degree-granting institution is accountable for the educational experience leading to the degree. The clinical education component is the responsibility of the sponsor of an allied health education program, whether provided directly by the sponsoring agency or through an outside affiliation. The program sponsor cannot free itself of this responsibility.

13. FINAL DECISION-MAKING AUTHORITY IN THE MANAGEMENT OF THE CLINICAL EDUCATION COMPONENT SHOULD BE EXERCISED BY THE SPONSORING INSTITUTION

As discussed above, the institution sponsoring an education program is accountable for the satisfactory conduct of that program. In order to be held publicly accountable, the sponsor must have final decision-making authority in all matters pertaining to the conduct of that program including the clinical education phase, whether conducted directly by the sponsor or through external affiliation.

The difficulties in managing and controlling clinical education when it is provided by an outside institution or agency are recognized. However, if the clinical education component is to be part of the total curriculum, it must be managed and controlled by the sponsoring institution with the same degree of thoroughness as the academic component. If this is not done, for whatever reason, the clinical education component of allied health education, as presently constructed, can no longer be considered as part of the formal educational curriculum.

This recommendation has special significance to the growing need for clinical affiliations for programs in educational institutions. Health care institutions serving as clinical affiliates have an essential role; it is necessary and important that the sponsoring institution involve them in planning and control to the fullest possible extent. It must be recognized by all parties that the sponsor must have authority in matters relating to the conduct of the clinical education program. However, it must also be recognized that the health care institution is responsible for the safety and welfare of its patients and exercises total authority in this regard. The need for a close working relationship and rational accommodation is highly evident.

14. AFFILIATIONS SHOULD BE BASED ON A FORMAL AGREEMENT

A formal operating agreement should be developed by the sponsoring agency to govern its working relationship with any affiliating institution(s). The agreement should be based upon program requirements and the provision of essential resources. The agreement should cover the following matters in detail:

- Tasks to be performed by each institution
- Resources to be provided by each institution
    - Faculty
    - Uniforms
    - Housing and subsistence
    - Transportation
    - Other
- Formal methods of communication
- Evaluation mechanisms
- Process for reporting program deficiencies
- Process for selecting and assigning students
- Provision for terminating affiliation
- Provision for annual review

The formal agreement should provide the basic organizational structure within which the clinical education program is managed.

15. THE SPONSORING INSTITUTION SHOULD MAINTAIN CONTINUING AND EFFECTIVE COMMUNICATION WITH ANY AFFILIATING HEALTH CARE INSTITUTION

In order to ensure proper coordination and conduct of the clinical education program, the sponsoring institution should establish mechanisms to ensure continuing contact and communication with the affiliating institution. This contact and communication should extend at regular intervals to the top management level in the affiliating institution. Mechanisms to be considered should include:

- Direct visits
- Reports, records, and written correspondence
- Interchange of faculty and clinical personnel on a short-term basis
- Establishment of joint advisory committees

The purpose of formal communication mechanisms is to provide continuing feedback on the conduct of the program and to provide sufficient opportunity for the affiliating health care institution to make input into the decision-making process.

* * * *

In summary, the major problems of managing the clinical education component of allied health education programs which are characteristic of the entire field of allied health education have serious implications for the future effectiveness and efficiency of the field. Of even greater impact is the implication which this inadequate management has for the quality of the allied health worker turned out. Without question, the need for high quality among all personnel in the health care field is greater at present than at any time in the past. Improved management of clinical education will increase the effectiveness of this phase of allied health manpower development.

VI. REQUIREMENTS FOR HUMAN AND PHYSICAL RESOURCES

The provision of effective clinical education for allied health students is contingent on the adequacy of both monetary and nonmonetary resources. This chapter deals with nonmonetary resources which, in general, are:

- Human resources
- Physical resources

Chapter VIII treats financial resources. This division reflects the different nature of the issues associated with nonmonetary and monetary resources.

Identification of the types of resources essential to the provision of clinical education is basic to any analysis of availability and utilization. This includes the characteristics and uses of instructional aids and equipment as well as the goals of health care agencies, which are critical determinants of resource availability and utilization. These basic considerations are treated in the first part of this chapter.

The availability of resources to support clinical education is importantly affected by the ways in which they are used. The major generic problem with respect to resources is the widespread shortage of high-quality sites for clinical education. Inefficient use of the broad array of health care institutions which represent potential resources for the support of clinical education further compounds this problem. Shortages of qualified personnel and various types of equipment and material pose further limiting factors in the conduct of effective clinical education.

More effective use of available health care institutional resources is of major importance in providing the needed clinical education for students. Recommended approaches for improved use of available resources are discussed in this chapter. In addition, methods for development of instructional aids and equipment and their use in clinical and continuing education are also discussed.

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PRESENT ISSUES AND PROBLEMS

1. A BROAD RANGE OF RESOURCES IS REQUIRED TO SUPPORT THE CLINICAL TRAINING OF ALLIED HEALTH MANPOWER

Instructional personnel, facilities, and special equipment are the mainstays of organized education. In the case of education for the allied health occupations, additional specialized requirements arise from the need for learning experiences in a real or live patient care setting. Students are required to participate in the care of patients and to practice the use of diagnostic and treatment equipment and facilities.

(1) Allied Health Clinical Education Depends Upon Support From Many Types of Health Care Agencies

Traditionally, clinical affiliations for allied health education have been arranged to accommodate small numbers of students in different health care settings. In part, this pattern is a result of the historical evolution of allied health programs from on-the-job or apprentice type training. It also reflects the fact that most allied health services are found in specific types of health care institutions.

Health care institutions must provide sufficient volume and breadth of clinical exposure to meet current educational requirements.

Clinical education necessitates student performance of diagnostic and treatment functions. Actual patients and patient specimens are essential ingredients in clinical education.

Currently, some allied health occupations have quantitative requirements in terms of the number of patients or patient specimens or procedures which the student must be exposed to. For example, standards specify the number of laboratory tests and X-ray procedures required for acceptable clinical education. Although not explicitly stated in other instances, it is generally accepted that students should have access to a broad or heterogeneous spectrum of patients and specimens in terms of:

- Personal characteristics such as age and sex
- Pathology and disease types

At a minimum, this variation in patient and disease should be broad enough to permit the student to perform the usual range of functions associated with his occupation and recognize special conditions requiring special handling.

Growth in the number of allied health education programs and in student enrollment has resulted in the need to recruit increasing numbers of health care agencies for the conduct of clinical education. This need, in turn, imposes requirements for supporting resources on a variety of individual agencies.

(2) Clinical Education Requires Specific Types of Manpower Support

Both the program sponsor and the affiliated clinical institution need manpower for clinical education. Colleges (and other types of educational program sponsors) typically provide coordination for clinical education activities in a variety of affiliated hospitals or other health care agencies. The actual clinical instruction is generally provided by personnel of the health care agency.

Some exceptions to this pattern can be found in most occupations. In these cases, faculty of the educational program accompany students to the health care agencies and provide the primary source of instruction. In either case, the clinical coordinator and clinical instructor are key positions in assuring a sound educational experience.

The clinical coordinator typically is responsible for:

- Administrative matters pertaining to the affiliation such as student assignment scheduling and in the affiliating health care agency

- Working with personnel in the affiliated units who are instructing and supervising the students
- Providing guidance to program students, involving a varied scope of contact and support

The clinical coordinator also may be responsible for selecting and establishing affiliations, often in cooperation with the program director.

Among the more important attributes, it is generally accepted that the clinical coordinator should be:

- Conversant with clinical practice as well as instructional strategies, particularly the planning and development of learning experiences.
- Sensitive to the:
  - Interplay between the provision of health care and education in an operational environment
  - Reactions of students to the clinical environment
- A highly skilled practitioner. In addition, the clinical coordinator needs time and support to perform the many details of administration.
- Able to plan learning experiences, provide instruction, select supportive activities, communicate with students, and evaluate student achievement. The ability to determine a student's capability to function effectively in the clinical setting is essential.
- Able to create conditions conducive to student development in the clinical setting, such as acceptance by other staff.

- Responsible for the administrative aspects of the affiliation within the health care agency.

Clinical education also places requirements on other clinical staff. In some cases, these staff participate directly in student learning experiences. For example, they supervise students in the performance of particular functions or during specified periods of time.

It is generally accepted that a good clinical experience requires, in addition to the clinical instructor, rank and file practitioners to serve as role models who encourage learning through their actions and attitudes.

(3) Spatial Requirements To Accommodate Students in the Clinical Setting for the Learning Process Affect the Health Care Agency and Its Constituent Units

Clinical education for many allied health occupations requires student presence in a particular functional unit. For example, clinical instruction of medical laboratory workers occurs primarily within the laboratory and associated specialty areas, such as the blood bank. Similar conditions prevail in the case of medical records, physical therapy, ophthalmologic technology, radiologic technology, and, to a lesser extent, dietetics and occupational therapy.

In the case of inhalation therapy, treatment procedures are performed in the patient care units throughout the agency. As a result, requirements for student space are less centralized, extending into the nursing units.

Requirements for other accommodations, such as eating facilities, parking, and, in some cases, living quarters, may also be imposed on the health care agency.

(4) Clinical Education Requires Access to Appropriate Equipment

Clinical education requires various degrees of access to the diagnostic and treatment equipment and instruments used directly in rendering health care if students are to develop competency. Depending on the occupation, the equipment, and the student, repeated use of an instrument or machine may be necessary. Highly sophisticated equipment is increasingly critical to occupations focusing on diagnosis, such as the medical laboratory, radiology, and cardiopulmonary. It also is crucial to such treatment occupations as respiratory therapy.

Common practice across occupations is to attempt to provide access to the types of treatment equipment currently in use. Generally, it is felt that students should also develop at least a basic operational understanding of earlier instruments or machines as well as the latest equipment that is coming into general use. Frequently, a hospital's equipment for patient care will not suffice for instruction.

Another broad category of equipment which is essential to clinical education includes instructional aids. Instructional aids include those materials and equipment that facilitate effective learning and instruction and have several principal applications:

- Augmentation of instruction; syllabi, lesson plans, and manuals which assist the instructor in planning or conducting learning experiences; improve the instructor's transmittal of required information by providing increased variety and realism, potential for repetition, and elimination of constraints of place; audio and audiovisual materials, various types of simulations, textbooks, and references which conserve or reduce instruction time.

- Aids and equipment used for self-instruction are designed to permit the learner to acquire the requisite information without the active intervention of an instructor and reinforce instructor-student or student-patient learning processes. Programmed instruction refers to a structured combination of information, aids, and equipment to support learning. Computer-assisted instruction is a variation of programmed instruction, since it:

  - Provides information in discrete increments
  - Actively involves the learner
  - Provides rapid feedback on performance

- Use of aids and equipment in the evaluation of student learning is a recent development. The applications include:
    - Recording student performance in the clinical setting
    - Assessing student achievement of clinically-oriented knowledges, skills, and abilities outside the health care agency

Instructional aids and equipment for clinical education can improve efficiency and effectiveness of the learning process, increase subject matter coverage, and provide greater adaptability of the instruction to the learning capabilities of individual students. Instructional aids also conserve clinical resources by increasing the effectiveness of time spent in the health care setting.

The advantages of instructional aids and equipment are of particular importance to continuing education. They provide the practitioner with ready access to the latest scientific, technological, and procedural developments in his occupation which may not yet be available in his present employer organization.

(5) Requirements for Clinical Education Resources Vary Depending on the Characteristics of the Affiliation and the Participating Agencies

A number of factors may affect the resource requirements to support the clinical affiliation:

- Distance between the educational institution and the health care agency, which affects the need for supportive accommodations.
- Educational curriculum, which will affect student level of preparation and thereby the needs for instructional time and equipment access during the practicum.
- Number of affiliating students and their distribution in terms of sponsoring program, which may permit economics of scale or increase requirements.
- Organizational relationships between the participants, such as divisions within a health sciences center, members of a consortium, or affiliates. The nature of these relationships and their effects on resources are highly variable. The critical factor appears to be the importance attached to the relationship by the partners. Associated provisions such as those for personnel exchange also are important.

2. RESOURCES REQUIRED TO SUPPORT CLINICAL TRAINING ARE IN SHORT SUPPLY

In general, present shortages of resources available for clinical education represent a major problem. However, in a number of instances, the apparent shortage is due in large part to the inefficient use of available resources.

(1) In Some Areas and During Certain Periods, It Is Difficult To Obtain the Broad Range of Clincial Experiences Required To Support Specific Programs

An adequate mix of patients to support a broad range of clinical education programs in large teaching institutions is becoming increasingly difficult to obtain in many areas. The proportion of chronic and elderly patients in large acute care institutions is steadily increasing. These large teaching medical centers also tend to have patient populations dominated by the severely disadvantaged, with fewer patients representing the more common disease conditions. Both of these trends are associated with the advent of Medicare and Medicaid. A contrary trend, also stimulated by Medicare and Medicaid, is that persons with less complex disease conditions who might have used teaching hospitals are now utilizing smaller community hospitals in which clinical affiliation for allied health education is uncommon.

In addition to the above, the number of patients who require certain specialized clinic services during certain seasons is limited. For example, summer is a low demand period for respiratory therapy in many areas. Specialized disease conditions may be virtually absent in certain areas of the country or in particular types of health care agencies.

Pediatric patients requiring rehabilitation treatment in non-specialized agencies are often scarce. The variability of these situations minimizes their effect on clinical education across allied health occupations, but they can be crucial to specific occupations or locations.

(2) Student Access to Clinical Material or Patients May Be Restricted in a Variety of Ways

Few hospitals have policies identifying the specific activities and procedures that affiliating students may or may not perform. Rather, the policies define the general conditions applicable to affiliation and usually require only that supervision must be provided and that no activities precluded by the laws regarding an occupation may be performed.

Student activities and access to clinical material must be at the discretion of the clinical unit and individual instructors, with the basic consideration being patient safety.

Requirements of other affiliating students for clinical patient access may constrain allied health students. Medical students often have first priority to clinical patients. Preference also may be given to nursing students in some areas of the agency. Constraints are most likely to occur in the case of unusual patient conditions and special procedures. The occurrence of such situations is more frequent in the case of emerging occupations.

3. PRESENT UTILIZATION OF AVAILABLE HEALTH CARE AGENCIES FOR CLINICAL EDUCATION IS INEFFECTIVE

Professionals interviewed during the course of this study from all over the country report a shortage of health care agencies suitable for clinical education. In certain areas, real shortages do exist and are, in large part, attributable to:

- Small-sized institutions which offer very limited clinical experience in terms of the range in and volume of morbidity treated
- Extensive demand from many programs, which exceeds local capacity

Of greater significance, however, are the present patterns of use of health care agencies which are quite widespread and which account in large measure for the reported shortages.

(1) The Primary Objective of High-Quality Patient Care May Constrain Resource Availability

The first priority of health care agencies must be the provision of high-quality care to patients. Education and research are secondary objectives. Understandably, even where both service and educational goals are stressed in practice as well as policy, service governs in a conflict. This priority governs the time that agency personnel can spend on instruction; the attitude of staff toward clinical education; and student access to patients, patient material, and treatment equipment.

The relative priority which a health agency assigns to providing education also is a determining factor in the resources which are made available for allied health education, as are the other educational activities conducted by the health care facility.

(2) Reliance on Particular Types of Health Care Agencies Curtails the Use of Other Available Clinical Resources

Health care agencies serving as sites for clinical education generally fall into two categories:

- Traditional settings, which are various types of hospitals, special practice clinics and, more recently, private practice clinics
- Nontraditional settings (those that have normally not been used for clinical education): proprietary hospitals or laboratories, nursing homes, neighborhood health service centers, community service agencies, and even individual homes

Accreditation requirements and the attitudes of program personnel and students distinctly favor the traditional clinical setting. The prevailing tendency to rely on traditional settings results in failure to utilize the capacity for clinical education in other agencies. It also inhibits diversification of learning experiences. Students are not exposed to settings in which many of them will conceivably be employed.

Several factors contribute significantly to the prevailing reliance on traditional agencies:

- Accreditation standards and requirements which dictate that certain agencies cannot be used (proprietary agencies, for example) or that only certain agencies can be used
- Personal bias of individuals in charge of clinical education
- Poor student perceptions resulting from a lack of realistic knowledge of such settings as nursing homes

In order to expand the range of available clinical resources and to provide their students with a broader and, in many cases, more realistic clinical experience, some occupations, such as occupational therapy, physical therapy, and dietetics, have begun to support the use of selected nontraditional settings.

(3) Inefficient Use of Existing Capacity Is Caused by Present Practices in Scheduling Clinical Practicums

Many programs schedule their clinical education practicums or periods of intensive experience at the same time of the year, particularly spring and summer. This seasonal increase in demand results in shortages of clinical education spaces.

The effect of scheduling clinical practicums in blocks of weeks or months during the same periods of the year is accentuated by the lack of coordination and planning in scheduling. Typically, each program does its own scheduling with little, if any, reference to other programs, even those in the same sponsoring educational institution. Sharing of information regarding available spaces and demands for them also is exceptional.

Other scheduling practices which contribute to inefficient use of existing capacity for clinical education are:

- Reliance on the day-shift hours
- Lack of continuity in student assignment, such as a half-day every other day over a semester
- Part-time basis of student assignment, such as three hours of clinical practicum each day

4. UNAVAILABILITY OF STUDENT SPACES IN THE CLINICAL SETTING IS A FUNDAMENTAL CONSTRAINT ON CLINICAL EDUCATION

Lack of clinical education opportunities for allied health students is an increasing problem for basic occupational programs sponsored by educational institutions. The difficulty has been addressed in many forums including speeches to associations and journal articles. More specific indicators include:

- Use of as many as 100 clinical sites by one program, with a range of 10 to 50 not uncommon in some occupations
- Inability of program sponsors to arrange affiliations for students when needed
- Advance scheduling of affiliations of up to three years
- Constraints on program initiation, as shown by Exhibit X, following this page
- Amount of efforts expended by programs to identify affiliations*
- Acknowledged reliance on inadequate affiliations in the absence of alternatives

5. SCARCITY OF QUALIFIED CLINICAL INSTRUCTORS HAMPERS CLINICAL EDUCATION

The unavailability of clinical staff with instructional capabilities is an important impediment to effective clinical education. Educational programs also encounter difficulties with respect to enlisting faculty to support clinical education. Contributory factors are discussed in the following sections.

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*A special committee of the American Occupational Therapy Association working on the development of a computerized affiliation matching system has estimated that occupational therapy programs spend $750,000 per year in scheduling clinical sites for student affiliations.

EXHIBIT X

CONSTRAINTS ON PROGRAM EXPANSION DUE TO UNAVAILABILITY OF CLINICAL FACILITIES*

Program and Degree of Constraint	Unavailability of Clinical Facilities
Dietitian	
Little or None	9.5
Moderate	16.7
Severe	21.4
Medical Technologist	
Little or None	22.7
Moderate	14.4
Severe	16.5
Medical Record Librarian	
Little or None	16.7
Moderate	33.3
Severe	--
X-Ray Technician	
Little or None	14.3
Moderate	42.9
Severe	14.3
Occupational Therapist	
Little or None	4.3
Moderate	26.1
Severe	34.8
Physical Therapist	
Little or None	21.2
Moderate	24.3
Severe	18.2
All Programs Reporting	
Little or None	15.8
Moderate	16.6
Severe	22.3

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*Programming Methods, Inc., Impact of the Allied Health Basic Improvement Grant Program on Health Education Programs, Final Report (sponsored by U.S. Department of Health, Education, and Welfare, National Institutes of Health, Bureau of Health Manpower Education) Silver Spring, Maryland, July 31, 1971, p. 35; only reflects needs of programs receiving basic improvement grants.

(1) A Shortage of Qualified Clinical Instructors Exists in Most Allied Health Occupations

Many factors contribute to the overall problem of unavailability of health care agency staff who meet the previously discussed requirements for clinical instructors. These factors include:

- Inability or failure of health care agencies to staff for clinical instruction.
- Accreditation requirements which stipulate academic, experience, and professional qualifications may preclude otherwise qualified staff from serving as instructors.
- Inadequate instructional capabilities which may be due to inadequate command of the discipline from the viewpoint of depth or currency or to limited opportunities to develop the required capabilities.

These difficulties are aggravated by the limited opportunities which are available to develop good clinical instructors. A number of factors serve to limit such development opportunities:

- Absence of provisions in allied health education programs to prepare instructors
- Increased numbers of agency staff involved in education, without any preparation for the role
- Inability of professional associations, educational institutions, and other efforts to provide sufficient opportunities

- Inadequacies of occupationally related continuing education, as discussed in Chapter II
- Uncertainties as to how to prepare clinical instructors and, even, the inportance of such preparation

(2) Lack of Up-to-Date Clinical Skills Among Their Own Faculty Is Also a Problem for Many Colleges and Universities

The problems experienced by many programs in finding persons for faculty positions are less today than they were in the 1960's. Programs in emerging fields and rural locations are still apt to encounter difficulties, however.

Didactic instruction in the academic setting often suffers as a result of these weaknesses and in turn impedes coordination with clinical affiliations. Affiliations have been refused or dropped because of faculty insensitivity and a lack of understanding of the dynamics in the clinical setting.

Inadequacies of educational institution faculty are associated with a number of factors:

- Limited development opportunities, as previously discussed.
- Failure to recognize nonacademic credentials. This failure is particularly pronounced in faculty salary and promotional policies, although some

academic settings are unable to hire qualified practitioners. These policies contribute to:

- Refusal of practitioners to accept faculty positions.
- Turnover among faculty who are practitioner oriented. Exceptions do occur in settings which are very occupational oriented such as vocational-technical schools and some community colleges.

Failure of many educational settings to provide incentive or support for faculty to update their clinical skills or to obtain refresher practice. Heavy faculty work loads minimize the opportunities for such practice.

It is reported that the latter factor is more of a problem in educational programs which are not located in or part of an academic health center.

(3) Clinical Coordinators Are Often Inadequately Supported by Their Own Institutions

In spite of growing recognition of the primary importance of coordinating all clinical education affiliations for their students, many educational institutions assign the tasks of coordination to faculty members in addition to a full teaching load. Frequently, clinical coordinators are not given a sufficient budget to meet the necessary minimal travel and related expenses. Administrative and secretarial support is often unavailable or inadequate. As a result of this widespread lack of support, the coordination of clinical affiliations and the supervision and evaluation of the practicum by the sponsoring educational institution are generally poor even when a "clinical coordinator" has been identified.

6. THE POTENTIAL OF HEALTH CARE AGENCY STAFF TO SUPPORT CLINICAL EDUCATION IS NOT BEING REALIZED

Many staff in health care agencies who are now little involved with training are capable of supporting clinical education at slight additional cost to the agency.

(1) Recognition for Clinical Instruction Often Is Not Provided

Health care agencies rarely provide any type of special monetary reimbursement for staff who provide clinical instruction. Reimbursement by educational program sponsors is also infrequent. Many staff members believe that, although monetary reimbursement is not essential, some form of recognition is vital for those who have educational as well as patient care responsibilities.

It is important to note also that other nonmonetary recognition is generally not provided by either the agency or the educational sponsor. Educational institutions are moving to remedy this omission, although some have policies that prevent programs from extending faculty appointments to clinical staff. Other institutions must differentiate between academic faculty and clinical staff to such an extent that the latter's appointments become essentially meaningless.

(2) Attitudes May Inhibit Staff Ability To Serve as Role Models

The fact that the clinical education program represents, to many staff members on the health care agency, additional work for which they receive neither monetary reward nor other recognition often generates negative attitudes by staff toward the program and its students.

7. SPECIAL CIRCUMSTANCES AND SERVICE DEMANDS LIMIT THE AVAILABILITY AND UTILIZATION OF TREATMENT EQUIPMENT

Availability of treatment equipment to support clinical education poses problems across occupations and health care agencies. These problems do not appear to be as widespread or critical as shortages of space and personnel. However, agency characteristics and particular conditions limit availability in some instances. These exceptions are particularly important in the case of small health care agencies.

Unavailability of large, specialized, and sophisticated equipment is particularly important in the following occupational areas:

- Cardiopulmonary technology
- Medical laboratory
- Specialty areas within respiratory therapy
- Radiology

Some programs have remedied this lack through resort to special or rotational affiliations, that is, limited periods of special-purpose exposure in health care agencies with specialized equipment and patient populations. This approach is used by health agencies which sponsor programs as well as by educational institutions, on a limited basis.

(2) Shortages of Treatment Equipment Hamper Programs in Educational Institutions

Educational institutions with allied health preparation programs usually acquire treatment equipment for instructional use exclusively. The types and quantities of this equipment are usually very limited, primarily due to inadequate budgets. Students in many programs thus have little opportunity to develop any familiarity with treatment equipment, much less rudimentary skills, prior to going to the health care agency. As a result, in the clinical setting, they have greater needs for instruction and access to equipment. This problem varies by discipline and educational institution, but vocational-technical schools and community colleges, which emphasize health education, tend to have better equipment.

(3) Service Demands Are an Important Constraint on Student Access to Treatment Equipment

Clinical education for other health occupations sometimes hampers access by allied health students to patients. It similarly reduces access to treatment equipment, especially specialized equipment. Service demands impose a much more important constraint on student access to specialized and sophisticated equipment. Such equipment rarely is available in quantity.

Instructors may discourage the use of treatment equipment by students. Protection of the equipment must often be of primary importance to the instructor.

8. LIMITATIONS ON THE QUANTITY AND QUALITY OF INSTRUCTIONAL AIDS AND EQUIPMENT INTENSIFY REQUIREMENTS ON HEALTH CARE AGENCIES

The purpose of instructional aids and equipment is to facilitate the learning process. When they are underutilized in the classroom, the process of designing and implementing an effective clinical learning experience is made unnecessarily difficult. Current limitations on instructional aids and equipment and their effects on health care agencies, in particular, are discussed in the following sections.

(1) Instructional Aids for Allied Health Clinical Education Are Scarce and of Poor Quality

Instructional materials in different allied health fields, such as manuals, audiovisuals, and self-instruction modules, are very scarce. Some good materials do exist, for example, clinical instructor manuals and supportive materials in occupational therapy. Numerous audiovisuals are available in the clinical laboratory field, as are self-instruction modules, which have been used effectively in supporting the learning of clinical laboratory techniques. Case studies are being used in physical therapy, and the number of aids to support dietitian continuing education is increasing through professional association and individual efforts. Videotape systems are used for instruction and evaluation by a small number of programs in various fields, including radiologic technology.* However, many personnel in educational and clinical settings still cite the absence of even rudimentary aids, particularly for instructors, as a major drawback.

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*See the Resources section of Volume II, Part B, for citations to descriptions of some materials and their uses.

The more sophisticated aids and equipment are limited across allied health occupations, for example, combination systems* and simulations of bodily processes. Materials suitable to allied health students, as opposed to medical students, are particularly scarce. Quality of available materials also is of major concern to many educators and health care agency staff operating clinical education. Many instructional aids and much equipment are described as being out of date and/or inappropriate to clinical education for allied health personnel. Journal articles, conference presentations, and symposia reflect these concerns.** This problem is further aggravated by the fact that many individuals involved in clinical education have only limited knowledge of exactly what aids and equipment are available. Poor dissemination of such information in the field hampers improvement of the present situation.

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*A combination system is one in which audiovisual modes, such as videotape, are used with a less visual instructional mode, for example, a computer assisted (CAI) system or a workbook.

**See Volume III.

(2) Development of Instructional Aids and Equipment Has Been Impeded by Complex Requirements and Lack of Coordinated Effort

Efforts to promote the development and use of instructional materials and equipment are being made in health science centers across the country. Other centers are establishing such functions. Similar activities operate in many two- and four-year colleges and in vocational-technical schools. Individual health care agencies and educational programs also are involved in instructional aid development and application.

A common but unfortunate characteristic of development efforts is their focus on needs and resources unique to the sponsoring agency. Many factors contribute to this situation, including:

- Deficiencies in information regarding the availability of instructional aids and equipment, despite recent cataloging and coordination efforts by government, professional associations, and specialized organizations
- Orientation of available materials to particular institutions
- Differences in supporting equipment availability and characteristics

As a result, the cycle of disparate, uncoordinated efforts continues, as do overall limitations in the quantity of available aids and equipment.

RECOMMENDED ACTION

The following recommendations for improving clinical resources for allied health education are premised on a number of assumptions. A basic assumption is that health care agencies are committed to clinical education as a learning experience for students. A second assumption is that educational institutions recognize and exercise their responsibilities to use clinical resources efficiently and effectively. Such utilization also requires that they provide active support for clinical education.

9. ADDITIONAL TYPES OF HEALTH CARE AGENCIES SHOULD BE INVOLVED IN CLINICAL EDUCATION

Involvement of additional types of health care agencies in clinical education for allied health is necessary and desirable to meet present and future demands. Exposure to different settings also is necessary to provide well-rounded clinical education in many occupations. Sites for performing occupational functions are changing with shifts in health care emphasis and delivery. Educational program sponsors should involve a greater number and diversity of health care agencies in clinical education.

(1) Allied Health Programs Should Develop a Strategy To Sell Health Care Agencies on Participating in Clinical Education

Health care agencies and administrators may misconceive the requirements associated with clinical education for allied health and shy away from involvement. Alternatively, they may be unaware of the benefits of participating in clinical education, discussed in Chapter VIII. Educational institutions should develop and implement strategies for gaining cooperation from nonparticipating agencies.

The effectiveness of a direct approach to top-level administrators of clinical agencies has been demonstrated. Support to be provided for the agency's involvement should be identified. A similar but detailed approach can be made to individual clinical units within the large health care institution.

(2) A Greater Variety of Agencies Should Be Involved in Allied Health Clinical Education

Allied health programs should actively seek diversification in affiliating agencies among those which have not traditionally participated and among newly emerging institutional types. They should therefore encourage less restrictive credentialing requirements, which now inhibit affiliations with particular agencies in some occupations.

Occupational education needs should be a prime factor in diversification. For example, physical therapy and occupational therapy functions are increasingly performed in nonhospital settings. A similar shift is emerging in dietetics and has been indicated for other occupations. Greater emphasis should be placed on use of community-based agencies for clinical education. Home-based care experiences also should receive attention.

Diversification should include establishment of affiliations with health care agencies not used previously. For example, programs accustomed to relying on university centers should consider affiliating with general community hospitals. Advantages of general community hospitals may include more representative patient mixes and equipment resources not subject to the demands of university centers. Affiliations with public agencies also should be explored. These agencies provide an opportunity to realize broad-based tax support for clinical education. The success of the Veterans Administration model also suggests the merit in greater reliance on Federal agencies.

(3) Special Purpose Affiliations Should Be Arranged With Clear-Cut Division of Responsibility

Few clinical settings are singularly capable of exposing students to the range of modalities, equipment, and patients characteristic of modern health services. At the same time, efficiency and practicality require some concentration of the clinical education provided by individual programs. Special secondary affiliations should be arranged to provide students with experiences that are not available in primary sites.* For example, medical technology students affiliating at a community hospital might spend one day a week at an adjacent blood bank for a specified period.

Sponsoring educational institutions should determine the requirements for supplementary clinical experiences in conjunction with primary affiliations. The nature of required rotational experiences should be clearly identified, as should associated responsibilities. The sponsor may retain responsibility for arranging special rotations or delegate it to affiliated agencies. These decisions should reflect the relative capabilities of the partners to organize effective rotations. Location of desirable secondary settings is a factor to be considered, as is administrative capacity.

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*Primary clinical sites are the agencies to which students are assigned for major portions of their clinical education.

10. EDUCATIONAL INSTITUTIONS SHOULD COOPERATE WITH HEALTH CARE AGENCIES IN ACHIEVING MORE EFFICIENT USE OF EXISTING CLINICAL CAPACITY

In health care agencies providing affiliations, space and resources may be available but not used to support clinical education for allied health. Coordinated scheduling on a regional basis and changes in affiliation timing will permit more students to receive effective clinical education. Educational institutions and health care agencies should cooperate in identifying and implementing changes, considering the constraints unique to each.

(1) Scheduling of Clinical Allied Health Programs and Clinical Affiliations Should Be Coordinated on a Regional Basis

Clinical education should be scheduled on a coordinated regional basis to improve utilization of available health care agency resources. Educational institutions and clinical institutions could thereby exchange information on requirements for student places and on capability to meet these needs.

Support for multioccupational coordination of scheduling should be provided by national organizations such as the Association of Schools of Allied Health Professions, the American Hospital Association, and occupational associations.

A region may be as small as a metropolitan area and its adjacent suburbs or as large as a combination of states. Meaningful identification of program needs and health care agency capabilities would be complicated by broader coverage. Participation by small health care institutions might also be inhibited. National systems for coordinated scheduling should be structured to complement more local efforts.

The benefits to the clinical education process as well as to students more than justify the difficulties involved in initiating a coordinated scheduling approach. Coordination would help minimize the growing trend to competition among programs and the considerable efforts expended to secure affiliations which tax the resources of educational programs and clinical sites. Other benefits include a forum for grappling with mutual problems related to specific resources such as staff.

(2) More Efficient and Effective Timing of Clinical Experiences Should Be Arranged

The reliance on certain times of the year, hours of the day, and days of the week should be re-examined and revised. Changes in scheduling intermittent experiences should be responsive to needs for integration and repetition. At the same time, part-time student presence in the health care unit should be minimized, for example, by scheduling students for whole days rather than half-days.

Changes in the occurrence and duration of clinical education will require more flexible scheduling by educational institutions, which may also need to provide special services, such as making school facilities assessible to students before or after a late evening or weekend clinical experience. Serious consideration should be given to having educational faculty provide instruction in the clinical setting during off-hours, as is being done by some programs.

Scheduling changes also will affect the health care agency. Staff may be needed to support instruction during different shifts. Student access to treatment equipment or supportive facilities may need to be improved. These requirements should be reflected in health care agency provisions for effective educational use of clinical resources.

11. ACTIONS SHOULD BE TAKEN TO STRENGTHEN THE CLINICAL EDUCATION FUNCTION IN HEALTH CARE AGENCIES

Clinical education in health care agencies should be strengthened and improved. Both partners should undertake specific activities directed to this goal with public and private support.

(1) Affiliation Should Be Made a Reciprocal Arrangement To Maximize Utilization of Clinical Resources

Complementary capabilities and resources of educational institutions and health care agencies should be organized so that each realizes maximum effectiveness through affiliation. Reciprocal arrangements will strengthen clinical education, particularly in the area of instruction.

Possibilities for increasing clinical staff involvement in the total educational process should be carefully explored by educational institutions. A basic step which should be taken to achieve such involvement requires that clinical instructors be given faculty status and privileges commensurate with their qualifications and contributions to student development. Such involvement will promote more integrated instruction while it contributes to the technical currency and educational expertise of clinical staff. An important consideration is definition of subject areas to which clinical staff can contribute most effectively.

(2) Educational Agencies Should Tailor Instruction to Agency Capabilities

Educational institutions should use their expertise to ensure efficient use of clinical settings and resources. Instructional approaches that take into account the resources and strengths of the affiliating health care agency would enhance clinical learning processes and improve resource utilization. For example, an X-ray unit experiencing heavy demands on its sophisticated equipment might be used for student observation, with "hands-on" experience to be provided by other agencies. In addition to the design of instructional approaches tailored to resource availability, educational institutions should support health care agencies in implementing new technology and/or methods and procedures. Thus, the approaches used should recognize and take advantage of agency-sponsored educational endeavors whether directed to basic preparation or continuing education.

(3) Health Care Agencies Should Coordinate Their Resources for Clinical Education

Within health care agencies providing affiliations, the use of clinical resources should be coordinated to minimize conflicting demands of service and of different educational programs. This will bring about more efficient use of available resources and also facilitate agency planning and regional coordination. For example, one agency might be designated a regional site for pediatric experiences, on the basis of treatment equipment and patient census, and a second for geriatric experiences. Establishment of objectives for educational affiliations by clinical agencies and units will provide a basis for focusing resources.

Provisions are needed to inventory and allocate resources for clinical education on a systematic basis. Regional inventories should identify and describe both actual and potential clinical resources. An update procedure should be provided to keep the inventory on a current basis. Agencies such as the area comprehensive health planning agency and AHEC's should conduct and maintain the inventory on a current basis. In addition, the CHP agency should provide information to educational and health care institutions and coordinate and assist in the development of affiliation agreements. Such a coordinating role would provide the CHP agency with an opportunity to promote broader and more effective use of available resources in the region.

The establishment of the information and coordination process described above will provide the foundation for developing planning for clinical education of allied health manpower on a regional basis. Development of this planning process on a formal basis should result in the top decision-making level in the educational and health care institutions in the region becoming involved. This is highly desirable if the necessary commitment by these institutions is to be achieved.

(4) Private and Public Support Should Be Provided for Development of Clinical Education Institutions

Private organizations such as professional associations and health-oriented foundations should pursue policies and provide support which will strengthen health care agency capabilities in clinical education. Organizational policies and activities should encourage initiative by health care agencies. Development of educational models for any implementation should be accentuated at national and state levels, such as the current efforts of the Hospital Research and Education Trust.*

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*The trust is developing models to illustrate different ways of organizing and conducting hospital-wide education programs with funding from the W.K. Kellogg Foundation.

Public entities should support such undertakings. Policies of educational systems should be revised where they impinge on realization of health agency capabilities. For example, restrictions on conferral of faculty status may need to be eliminated. Provisions for technical assistance should be accentuated by Federal and state governments. In particular, health care agencies should be assisted to plan and coordinate their resources for education.

12. CONCENTRATED EFFORTS SHOULD BE MADE TO DEVELOP CLINICAL STAFF POTENTIAL FOR EDUCATION

Health care agencies involved in clinical education should take steps to promote staff involvement in the clinical education process instruction. Contributions of role models to effective learning should receive greater emphasis. Clinical education will be enhanced by action in either area; concentrated efforts will produce greater dividends for clinical staff availability and utilization.

Current efforts should be intensified and expanded to provide clinical staff with opportunities and incentives for developing instructional skills. Educational institutions should cooperate with professional associations and health care agencies in new undertakings.

(1) Health Care Agencies Should Staff To Provide Instruction

Health care agencies involved in clinical education should accept the responsibility to provide qualified staff as required. Primary responsibility for clinical instruction, including administrative aspects, should be clearly assigned within units, preferably to one staff member. The instructional responsibilities of other staff should be specified and reflected in job descriptions. Staffing patterns and schedules should permit personnel to fulfill instructional responsibilities without being inhibited by service requirements.

Hiring and assignment should reflect capabilities for instruction where it is part of a job description. Compensation also should recognize instructional duties. In addition, health care agency policies should provide for staff to augment instructional skills through formal courses and should reward such efforts through provision of perquisites and special compensation.

(2) The Contributions of Role Models to Clinical Education Should Be Explicitly Identified and Recognized

Personnel for students to emulate are "role models." In the clinical setting, role models are instructors plus others with whom the students are in frequent contact. Health care agencies and educational institutions should identify individuals who can, should, and do function as role models and arrange that this essential component of clinical training is well met. All "role model" individuals, whether formally involved in clinical training or not, should be oriented to clinical education and the effects of their actions and attitudes on student learning.

(3) Educational Institutions and Professional Associations Should Expand Efforts To Develop Clinical Instructional Skills

Several types of opportunities for clinical staff to develop instructional skills are now provided by educational institutions and professional associations. The workshops and institutes organized by national professional associations to develop clinical instructor capabilities are greatly needed and should be expanded. A number of professional associations do conduct such activities, including:

- American Dietetic Association
- American Occupational Therapy Association
- American Medical Records Association
- American Society of Radiologic Technology

State associations may have sponsored similar activities, as have many educational institutions. The latter have attracted local, regional, and national participation.

Some educational institutions conduct seminars, workshops, and faculty meetings in their affiliated health care agencies. More formalized courses on clinical instruction are also available in educational institutions, in special programs, or in conjunction with graduate studies. Short- and long-term programs to develop teaching competencies include those operated under the W. K. Kellogg Foundation Allied Health Instructional Personnel (AHIP) Center Program.*

Expansion of these activities appears required to meet current needs. Both formal programs and special purpose development opportunities should be launched for clinical staff.

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*This program is currently operative in seven universities. In addition to graduate-level teacher preparation and, in some cases, undergraduate programs, each center operates specialized activities. Pedagogical skills can be augmented by participating in instructional aid development and testing or in continuing education projects.

(4) Opportunities and Incentives for Development of Individual Instructional Capabilities Should Be Carefully Designed

New opportunities for clinical staff to augment their instructional skills should be carefully designed in light of institutional and individual capabilities as well as needs. These opportunities should be structured so that participants receive formal recognition, including educational credit. Instructional skills should not be emphasized at the expense of clinicians' concern with updating technical capabilities. In fact, the correlation between occupational conversancy and effective instruction should be explicitly stressed.

Greater attention should be given to short-term courses and to the instructor's role in facilitating learning. Educational institutions and professional associations should explore the feasibility of collaborative sponsorship and conduct of instructor development activities. In addition to cooperation among institutions and among associations, joint efforts in particular occupational areas should be investigated.

(5) Formal Programs for Instructor Development Should Be Based on Analysis of Present and Future Requirements

In establishing formalized programs, attention should be given to future as well as present requirements for instructional personnel. Analyses of requirements within occupations or groups thereof would facilitate improved planning. The need to establish formal but meaningful qualifications for clinical instructors should be examined critically, as should greater reliance on education faculty. Appropriate locations for formal instructor training opportunities should be identified from these requirements and consideration of instructor access.

13. EDUCATIONAL INSTITUTIONS SHOULD EXPAND THEIR RESOURCES TO SUPPORT CLINICAL EDUCATION

Clinical education programs sponsored by educational institutions should improve their resources to prepare students for learning in the health care agency. Educational institutions should also increase their capabilities to support student progress in clinical settings. Improvements will be necessary in both human and physical resources.

(1) Educational Institutions Should Improve Provisions To Ensure Capable Faculty for Clinical Education

Meaningful didactic instruction will be enhanced by hiring well qualified clinicians to serve on faculties. They should have opportunities and incentives for clinical skill maintenance, including consideration of special compensation.

Special provisions to obtain and maintain competency are crucial in the case of clinical coordinators. Means to ensure that coordinators remain current with didactic curriculum and educational development also will be necessary. In addition, coordinators should be given adequate resources to maintain close contacts with clinical settings and students.

Institutional policies should be carefully examined for constraints in any of these areas. Necessary revisions should be implemented by individual institutions or across educational systems. Government and other organizations which influence educational policies should explicitly recognize the need for provisions to meet clinical education requirements.

(2) Capabilities To Provide Simulated Clinical Situations Should Be Strengthened

Simulated clinical exercises in educational institutions enhance student preparation for and progress in clinical settings. They thereby minimize the time required in the health care agency. Provision of such experiences will require strengthening of current capabilities for simulated clinical situations in many institutions.

Possibilities for temporary use of diagnostic and treatment equipment and instruments should be explored to augment permanent acquisitions of equipment. In addition, educational institutions should make arrangements to obtain patient specimens and related materials, such as record sets, charts, etc., to conduct realistic laboratory exercises. This approach has particular potential (and actual application) in medical laboratory and medical records occupations but also would prepare students for basic functions in other occupations. Greater use of role playing and "professional patients"* should be explored.

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*Professional patients are persons with permanent disabilities who are hired to serve as subjects for student performance.

(3) Health Care Agencies Should Assist Educational Agencies in Improving Their Clinical Education Resources

Arrangements should be made by which health care agencies can help educational programs to identify weaknesses in their resources to support clinical education. For example, local health care agency expertise would be very valuable in determining appropriate treatment equipment required for simulated clinical situations. Regional coordination would also provide a useful forum for coordination.

14. ACTIVITIES TO SUPPORT INCREASED DEVELOPMENT AND USE OF INSTRUCTIONAL AIDS AND EQUIPMENT SHOULD BE EXPANDED

Improving information about instructional aids and equipment should have high priority as a means to stimulate use of available materials. A variety of methods should be used to compile and disseminate comprehensive, descriptive details on quality materials.

Professional associations and government organizations should revise present methods or establish new ones to ensure that the information is complete and to achieve broader dissemination in the field. Frequent announcements on materials should be distributed which recognize different capabilities and requirements of potential users.

Inventory information systems and associated distribution networks should be organized on a regional basis wherever possible. Intersystem coordination could be provided, such as centralized operations. The ASAHP might inaugurate a similar capability while the AHA/HRET expanded theirs. Needs and resources for additional development efforts should be identified considering current inventories and ongoing activities on a similar basis. Specific activities should include:

- Establishment of priorities for support by government and association funding.
- Research on requirements for innovative materials such as those for simulation.
- Means to avoid legal constraints on widespread use of the results also should be investigated, such as government copyright. The variable effects of any approach on development and use are an important area of inquiry.

Comprehensive guidance also needs to be furnished to design and development activities regardless of their sponsorship. These guidelines should delineate development priorities and approaches for minimizing design and production complexities. They also should encourage standardization across efforts and occupations.

(1) Greater Attention Should Be Given to Instructional Materials for Use in Health Care Agencies

Increases in the diversity and quality of instructional aids and equipment available to clinical sites would benefit initial preparation of competent practitioners. They would stimulate continuing education activities as well. Government-supported efforts and those launched by associations should give more priority to providing aids and equipment for use in health agencies. The development of materials to support clinical instructors deserves major attention.

Generalized guides adaptable to local settings might outline procedures for expanding learning experiences, considering objectives and student progress. Evaluation approaches and reference sources also should be treated. These guides could then be augmented by more detailed direction, such as syllabi prepared by professional associations or programs. Each occupation should consider its own level of development in determining desirable specificity. Multi-occupational guides also should be developed.

The characteristics and capabilities of user health care agencies warrant greater recognition in the development of instructional aids and equipment. Self-instructional materials that do not require sophisticated backup, such as programmed texts, should be stressed. Alternatively, equipment available in clinical settings should be adapted to self-learning or evaluation systems. Such equipment includes communication, monitoring, and record systems. At the same time, the utility of various combinations of aids and equipment should be critically assessed across clinical settings and occupations.

(2) Instructional Aids and Equipment To Support Both Initial and Continuing Education Should Receive Priority

Design of materials for dual use in initial and continuing education would provide for economics in development. It would also augment the supply of materials available for continuing education. Dual-purpose materials should be stressed in both public and private development efforts.

Appropriate subject matter should be identified as a basis for developing dual-purpose materials. Advances in health technology are of particular importance. Needs associated with different levels of occupations should also be emphasized, since initial preparation for one level may be upgrading for another. Subject matter with multioccupational application should be delineated to facilitate comprehensive development and individual mobility.

Dual-purpose materials should be designed for audiences with different degrees of experience. Presentation sequences and ancillary items such as workbooks may therefore require minor differentiation.

15. ALTERNATIVE PATTERNS OF HEALTH CARE AGENCY INVOLVEMENT IN CLINICAL EDUCATION SHOULD BE EXPLORED

Establishment of settings with a primary mission of allied health clinical education is one alternative to health care agencies which have a dual service-education orientation. The effectiveness of a few operational settings of this type of "clinical school" should be vigorously analyzed prior to widespread adoption of this approach. A cost-effectiveness comparison should be made, including post-program experiences of students educated in these and conventional settings to determine the overall merits of this approach.

At the same time, revisions in reliance on other health care agencies should be explored. Expanding the capacity of particular agencies for specific types of clinical learning experiences could lead to overall reductions in requirements. One agency, for example, might provide all orientation in a region. Increasing the number of students accommodated within selected agencies would have similar benefits.

As mentioned in Chapter III, alternatives to current patterns of health care agency involvement should be investigated. Issues and implications associated with reliance on simulation, including necessary resources, are explored in one of the monographs included in Volume II. Previous sections identified resource requirements associated with less radical alternatives.

VII. STUDENTS AND CLINICAL EDUCATION

Present modes of clinical education require that students spend some time in an operational health care setting. Students play a many-faceted role in clinical education as they are expected to be participants in educational and health care processes and potential practitioners. In addition, students come to the clinical setting with unique social backgrounds, experience, and capabilities. These dimensions give rise to a multifaceted role and a variety of associated requirements.

The clinical setting itself imposes strict requirements on students. Accommodation to an atmosphere characterized by death, disease, and trauma is a prerequisite. Within this environment, interactions of various types are necessary with clinical staff and patients. In addition to differences in their illness or disease, patients also differ in their psychological and behavioral reactions to their illness and their treatment. In addition to responding to these varying patient needs, students often need to adjust for variations in procedures and techniques between clinical sites. Differences in clinical staff and their expectations may introduce additional pressures for student accommodation.

Special circumstances often confront students involved in clinical education. Clinical sites may be far removed from the student's residence and other primary activities. In addition to travel, a need may exist for special living arrangements, uniforms, or other supplies. These characteristics of clinical learning may exacerbate student stresses associated with physical relocation.

Problems confronting the student in clinical education are reviewed in the remainder of this chapter, followed by a discussion of recommendations for their solution.

PRESENT ISSUES AND PROBLEMS

1. THE STUDENT'S ROLE IN CLINICAL EDUCATION IS NOT CLEARLY DEFINED

Confusion over the student's role in clinical education is widespread due to a lack of clear understanding concerning the student's status and purpose in the clinical setting. Many students in clinical education have only limited understanding of their role. They experience difficulty in discerning their relationships with clinical instructors and staff. On the other hand, clinical educators and health care agencies often do not appear to appreciate student needs or respond to them. Various specific problems are occasioned by the lack of definition and appreciation of the students' role.

Many students take issue with requirements for specific numbers of hours of clinical training, its scheduling, and other specific requirements which apply during the affiliation. Such requirements may include those for uniforms or particular dress modes. At the same time, students often feel they are not accepted by the clinical staff of the host agencies. This lack of acceptance may be manifest in the unwillingness of staff to answer queries and to include students in informal interactions. Also, students may feel that they are not given opportunities to apply the knowledge and skills they do possess.

Clinicians are concerned about the attitudes and reactions of some students to their clinical training. Students may not appreciate the primary importance of service to patients and associated staff responsibilities, particularly in crisis situations. They may be insensitive to scheduling and other requirements within the clinical setting. In some instances, students are felt to be immature in their reactions to clinical situations. Poor experiences with a few students may foster the development of negative staff attitudes.

2. STUDENT MOTIVATION AND LEARNING MAY BE ADVERSELY AFFECTED BY THE TYPE OF ASSIGNMENT AND INADEQUATE DIRECTION

The type of activities they are assigned in the health care agency causes some students to feel that their presence is primarily to support service. The actions and attitudes of some clinical staff may also contribute to student feelings that they are being exploited. Learning is inhibited in such instances. Negative experiences may impair student motivation to fully utilize every opportunity to learn by doing provided in the clinical setting.

(1) Students Are Particularly Concerned With Meaningless Assignments

Students resent being assigned primarily "makework" or housekeeping tasks in the clinical setting. Such tasks are considered meaningless in terms of contributions to learning. When a student is assigned to a specialized unit which has very little working contact with other functional units or departments in the hospital or other health care agency, student activities may be restricted. Respiratory therapy is an example of this. Similarly, the student's activities may be constrained if other units do not feel that his unit or department meets institutional standards, for whatever reasons. In both cases, affiliating students tend to be relegated to nonlearning chores and prohibited from undertaking patient-related tasks in other areas of the hospital. Also, it appears that if the clinical unit is not well run or functions poorly, even if not recognized by other units, the student tends to be assigned housekeeping and similar activities.

Staff may also restrict students to repetitive, elementary tasks out of concern for patients or treatment equipment. Lack of confidence in students may also underlie such assignments. On the other hand, where the service is well-respected, the quality of practice is high, and staff are supportive of education, students are usually encouraged to undertake a variety of activities with increasing responsibility. Students rarely complain of too much responsibility under supervision.

(2) Lack of Supervision Leads Students To Feel They Are Being Used for Service

Students are frequently given inadequate supervision in the clinical setting and at times may be left completely alone. Inadequate supervision tends to be more pronounced in units with heavy work loads and limited experience in formal education. Students are particularly sensitive to performing clinical tasks without supervision. Periods when supervision is virtually nonexistent often are described by students as "their work." Unsupervised clinical activities result in allegations that they constitute service rather than learning since students often are forced to act without sufficient information. For example, students may have to select the techniques to be applied. At the same time, they may never know if the choice was proper or if they applied the technique correctly.

3. THE "DO OR DIE" NATURE OF CLINICAL PRACTICUM MAY IMPEDE STUDENT LEARNING AND PROGRAM COMPLETION

Successful completion of clinical practicum is required for most allied health occupations. Students therefore feel great pressure to perform at a high level in the clinical setting. Program completion is delayed where clinical affiliations are not available. Such delays may increase costs incurred by students and adversely affect manpower availability.

The desire to perform well often overshadows student concern with learning, particularly where grades are given for practicum. Students may be more interested in their marks than the experiences. They hesitate to ask questions which may reveal that they do not know a particular detail which could negatively affect their grade. Also, students may be reluctant to request staff assistance with particular assignments. As a result, they may

4. INFORMATION FOR STUDENT CAREER-CHOICE DECISIONS IS OFTEN INADEQUATE

Information on allied health occupations and related educational processes is often inaccessible and inadequate in detail and currency. Details on clinical education processes and resources are particularly weak. As a result, students may make ill-advised program choices and be hampered in their efforts to obtain affiliations. Either situation may result in student attrition, with associated personal and resource losses. Student difficulties in finding employment related to their education also stems from information deficiencies.

(1) Misconceptions Concerning Allied Health Occupations and Clinical Education May Mislead Many Students

Students frequently are unaware of the degree of patient contact associated with various allied health occupations. The type of illness or disease conditions that are treated in the different occupations and the mundane and repetitive nature of some health service tasks are not properly appreciated.

Most applicants are not familiar with the nature of clinical practicum. They are not fully aware that this requirement can impinge on personal responsibilities and time. In addition, many applicants are unaware of the academic requirements associated with clinical education. They may select programs for which they are unable to qualify and blame the institution for their inability to enter a program. Also, requirements for developmental course completion often are misunderstood.* In other cases, students find it very difficult to keep up in their clinical education courses because of a failure to have completed a related education course or inadequacies in backgrounds despite their individual efforts.

As a result, programs must cope with significant numbers of applicants who are not suited to a career in allied health or have not completed the basic prerequisites. More importantly, a number of students gain admission to programs and then drop out when they become informed of actual requirements. In other cases, students are terminated with consequent feelings of failure. These situations occur despite widespread use of formalized admission procedures.

(2) Many Program Sponsors, Especially Colleges and Universities, Do Not Fulfill Their Responsibility for Arranging Clinical Affiliation for Their Students

Many schools today list and promote an allied health educational program when in fact they provide only the basic "pre" or the academic phase of the program. Such schools cannot assure the student who completes his academic phase that he will be able to attain the clinical practicum.

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*Developmental courses are learning experiences directed to providing students with the basic capabilities they require to succeed in specialized courses.

Many programs, especially at the bachelor degree level, have students arrange their own affiliations from a list of acceptable facilities. In other cases, the student is expected to exercise his own initiative. This situation also occurs when the listed facilities have already been taken. The information available to the student tends to be limited, out-of-date, or both. Students frequently select their affiliations based on superficial descriptions and knowledge because of a sense of urgency to arrange an affiliation. Inability to locate an affiliation has sometimes delayed program completion.

(3) Job-Related Information Is Often Insufficient or Inadequate

Efforts of educational institutions to provide job-related information are largely confined to generalized descriptions of opportunities in particular occupations. Programs may maintain files of specific openings about which they are notified. Program directors and educational faculty attempt to maintain some information about job opportunities, as do clinical staff, but this information is often limited and incomplete.

Students often lack information on the distribution of available jobs, particularly those outside the immediate area of the clinical site or sponsoring educational program. Available information also tends to be out-of-date with respect to salaries and job duties.

As a result, students' attempts to utilize their training to maximum advantage are impaired. They may be forced to accept jobs which are less attractive than others which are available. In other cases, they turn to jobs in an occupation unrelated to their training.

5. STUDENT ATTRITION RESULTS FROM DIFFICULTIES IN FINANCING THEIR CLINICAL TRAINING

Student financing problems result from two characteristics of clinical education in allied health preparation:

- The arduous schedules associated with meeting didactic and practicum requirements often deter or preclude students from part-time employment.
- Traveling to and/or residing near a clinical site and other affiliation requirements involve special expenses for many students.

The trend toward elimination of stipends contributes to student financing problems. Program directors and student counselors report that each year a number of students drop out of allied health programs because of financial difficulties. These dropouts are distributed across various programs and geographic regions. However, students from rural areas or small communities may experience particular difficulty because of the unavailability of local affiliations.

(1) Increased Expenses Are Incurred During Clinical Training by a Majority of Students

Student expenses vary by occupation and distance between the sponsoring educational institution and the affiliating clinical agency. Since many agencies no longer provide affiliating students with room accommodations, students may have to rent a second residence at distant sites. Other students may have to buy a car or share expenses for transportation to a clinical facility that is not within their usual school commutation. Other special expenses incurred for clinical education include those for:

- Uniforms
- Equipment
- Special laboratory fees

These expenses may be particularly burdensome in the case of students from disadvantaged socioeconomic groups.

(2) Increasing Numbers of Clinical Agencies Are Abandoning Stipends, and Tuition Charges Are Being Instituted

Growing numbers of health care agencies are planning to eliminate stipends in the near future. Others have stopped paying them within the past two years despite the opposition and protests of clinicians and students. The abandonment of stipends is based on:

- Desire by health care agencies to minimize educational costs
- Problems associated with stipends including:
  - Misunderstanding of their purpose by educators and students
  - Difficulties of administration

At the same time, some educational institutions have begun to levy tuition charges for the period of clinical affiliation.

(3) Current Student Financing Sources Are Insufficient

Students have only limited sources of assistance for financing their clinical education in the absence of stipends. Scholarships and grants are rare. Loans designated for clinical education are virtually nonexistent. Other loan sources are often restricted in terms of availability, amount, and eligibility requirements.

(4) Difficulties Are Experienced in Obtaining General Support Services

Students encounter various degrees of difficulty in arranging for meals and parking as well as in gaining access to lounges, study areas, and supportive accommodations. These difficulties are considered nuisances which detract from maximum educational efficiency. They rarely cause students to terminate clinical education.

6. SELECTION PROCEDURES ARE BESET WITH DESIGN AND OPERATIONAL DIFFICULTIES

Procedures used in initial selection, or admission, of students to clinical education programs are often ineffective. Some qualified students may be excluded while some unqualified students may be admitted.

(1) Selection Procedures Often Do Not Include Capabilities Necessary to Clinical Competence

Prior grades, test and aptitude scores, and interviews are the mechanisms commonly used to screen students for program admission and assignment to clinical affiliations. A number of studies have shown correlations between academic grades, scores on aptitude and vocational interest batteries, and successful completion of clinical education.* However, current methods are acknowledged to be inadequate for determining individual capabilities for clinical education, particularly in the psychomotor and affective realms.** For example, students may not perform well academically but be very capable of good patient care. The practice of using academic grades as a criterion is particularly suspect. At the same time, allied health programs acknowledge that students may be terminated prior to clinical practicum on the basis of grades.

Selection processes often do not recognize clinical competencies gained through work experience or other non-organized educational experiences.*** This experience frequently is not taken into account in structuring students' courses of study or clinical assignments.

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*Most studies have focused primarily on didactic performance since grades were not given for practicum. Absence of measures for clinical performance has also precluded meaningful analysis of the relative utility of selection techniques.

**Recent studies have shown positive relationships between various types of psychomotor skills and clinical performance, depending on the occupation. Conversely, some skills have been shown to be less necessary in the clinical setting than previously perceived.

***Recent studies have shown positive relationships between work experience in a health service setting and development of clinical competency.

(2) Transfer Students May Encounter Special Problems

Prospective students may also experience difficulty in obtaining recognition for clinical education received in secondary school or in another postsecondary institution. In the latter instance, problems may occur even where academic credit has been granted for clinical experiences. Policies governing whether and how credit is awarded vary by occupation and institution. The potential seriousness of these difficulties is indicated by the following table.

Number of Students Who Transferred
From Various Types of Institutions
of Higher Education to 624
Senior Institutions, Fall, 1970

Institutions Transferred From	Number	Percent
Community-junior colleges	117,254	55
Public four-year institutions	56,692	27
Private four-year institutions	35,422	18

The table shows that student transfers to senior colleges exceeded 200,000 in Fall, 1970, with 55% being transfers from community and junior colleges. At the same time, students transferring from two-year vocational and technical programs--a major source of allied health education--have been estimated to experience a rejection rate of 62%.

(3) Open Admission Policies and Educator Discretion Pose Problems to the Operation of Selection Processes

Because of imperfections in selection mechanisms and the demand for postsecondary education, many educational institutions operate under some form of open admission. Students are permitted to enter the institution and even programs if they possess minimal qualifications, such as a high school diploma.

Open admission policies have various weaknesses, particularly where no provisions exist for students to evaluate their capabilities realistically or to remedy deficiencies. They may stimulate unrealistic expectations in students. Student deficiencies in theoretical and psychological preparedness for clinical practicum may often be traced back to an open admission policy. This tendency is particularly strong where students cannot be failed in didactic courses. In other cases, students find it very difficult to keep up in clinical education course work because of their failure to complete related education courses or inadequacies in their backgrounds despite their individual efforts.

Allied health programs often exercise some selectivity even where an open admission policy is followed. As a result, they may be vulnerable because of deviations from institutional practices. The discretion frequently given to a program director in selection may also create a potential for mistake and abuse.

Some allied health programs have established elaborate screening systems to ensure equitable consideration of all applicants. These systems include multiple interviews and comparisons of students using a combination of criteria. In other cases, committee decisions are required. However, the lack of meaningful screening measures hampers these efforts, which tend to require extensive staff time and effort.

The general lack of early exposure to the clinical environment exacerbates difficulties in determining student fitness and readiness for clinical assignment. It also deters student assessment of their interest in continuing allied health education.

(4) Courses for the Personal or Academic Development of Disadvantaged Students Suffer From Weakness in Content

Courses for the disadvantaged students are generally available in some form in allied health programs. Often their efficacy is debatable. A major inadequacy is insufficient correlation with substantive program content.

Unfavorable attitudes of students and faculty toward such courses may also detract from their effectiveness. They may be seen to constitute favored treatment or spoon-feeding by faculty and a superfluous requirement by students. These attitudes are reinforced where developmental courses are not academically recognized.

7. MATCHING STUDENTS AND CLINICAL AFFILIATIONS IS TROUBLESOME FOR STUDENTS, PROGRAMS, AND CLINICAL SITES

Currently, a variety of procedures are used to match students and clinical sites. In some cases, the responsibility falls on the students and, in others, programs make the assignment. Difficulties prevail in both situations. Where students are primarily responsible for arranging their own affiliations, the previously discussed lack of information compounds the burden placed on them. In this situation, students may encounter difficulties in securing affiliations because clinical units want to achieve particular mixes of affiliating students and are apt to refuse individual applicants. Health care agencies also may refuse or hesitate to accept noncitizens, foreign-born individuals, and other categories of students. For example, agencies which focus on the care of minorities may practice reverse discrimination; that is, they only provide affiliations for members of the minority group. The student-initiated approach also forces clinical staff to sift through and select from among diverse applicants, a time-consuming chore. The tendency of students and clinical units to strive for the "best" affiliation complicates and delays final decisions.

The alternative of the educational institution arranging clinical affiliations for students characterizes community college programs. This approach is becoming more widespread in baccalaureate programs. Student characteristics and preferences are taken into account to varying degrees. Sometimes student preferences, although solicited, are ignored for unexplained reasons. Student personal characteristics may be accorded undue importance in making assignments. These assignments also may not be responsive to legitimate concerns of health care agencies. For example, students need to be physically able to function within the clinical unit's areas of operation. Alternatively, agencies sometimes attempt to interject unrealistic criteria into the assignment process.

A final point regarding student assignment for the clinical practicum is that the pre-clinical controls and curriculum may not match the expectations of the various potential clinical affiliates where students may be assigned. This may be more of a problem when the student arranges his own affiliation than it is where a continuing affiliation has been developed by the program sponsor.

8. GUIDANCE OFTEN IS NOT AVAILABLE TO MEET STUDENT NEEDS

Students in allied health often have unique requirements for personal and occupational counseling and guidance. The arduous schedules associated with clinical education may necessitate adjustments in students' lives. In addition, students often need assistance in coping with clinical realities, such as death and other traumatic situations.

Guidance services often are informal even when available. The responsibility for counseling allied health students generally is assigned to program faculty within educational institutions. Frequently this function is relegated to the background by the press of instructional obligations.

Formal methods have been established by some programs and institutions to ensure that students can obtain needed guidance. Such methods include assignment of students to individual faculty members for counseling. In other cases, special institutional counselors are designated for allied health students.

Educational faculty who visit clinical sites in coordinating programs attempt to counsel students on these occasions. Other responsibilities, combined with large numbers of sites and students, however, minimize the attention given to individual students. Infrequent visits to the clinical facility also contribute to a lack of guidance when needed.

Within clinical units, counseling often is even less formalized. The nature of guidance varies by site and the interest of particular clinicians, although some occupations emphasize frequent, responsive counseling. Some clinicians stress the need for and importance of periodic counseling sessions with affiliating students. Some units also provide introductory sessions or materials for affiliating students. In many agencies, however, students are forced to work out their own problems.

9. EVALUATION OF STUDENT PERFORMANCE IS OFTEN INADEQUATE

Students often are dissatisfied with evaluations of their clinical performance, a concern shared by health care agency staff and educators. Current approaches do not provide meaningful assessments of the student's performance and his progressive development. As a result, efforts to focus or reinforce student learning are impeded.

(1) Evaluations of Student Performance Are Hampered by Lack of Meaningful Criteria, Measures, and Formats

Evaluation of student performance in clinical sites is impeded by the general lack of criteria for defining required performance. Measures to gauge clinical achievement are also limited. As a result, evaluations which are carried out are subject to various criticisms. Subjectivity and the use of unstructured written reports are major weaknesses. Structured evaluation formats are also criticized for misdirected emphasis and contradictory deficiencies: excessive and inadequate detail. Local programs are attempting to improve student evaluations, as are national professional associations. Few of those involved in these efforts are satisfied with the results obtained to date. Such efforts are concerned with the design of appropriate criteria, measures, and their application.

(2) Although Student Evaluation Is Generally Considered To Be of Considerable Value, It Is Not Used Effectively

Student evaluation of their clinical education is generally accepted as a worthwhile concept. However, with few exceptions, this procedure is not carried out satisfactorily. Many programs do not have a formalized procedure for such evaluations. Frequently, evaluations by students suffer from being overly subjective. For example, students highlight difficulties in personal interactions rather than deficiencies in the process. On the other hand, students question the receptivity of clinical staff to criticism of the education they provide.

Students question the value of their evaluations when they see little improvement despite repeated criticisms of the same deficiency. Educational institutions, however, have terminated clinical affiliations based on student comments. In other cases, student evaluations have provided the impetus for changes suggested to affiliating agencies. Revisions have also been incorporated into the didactic portions of programs. For example, greater use of on-campus laboratories has resulted from student evaluations. At the same time, students may be unaware of the basis for these changes.

10. PROBLEMS WITH PLACEMENT IN EMPLOYMENT CONFRONT STUDENTS WHO COMPLETE CLINICAL EDUCATION

Allied health programs generally acknowledge a moral responsibility to assist students in obtaining employment related to their preparation. A majority, however, contend that circumstances and resources constrain the support they can provide for initial job placements. The tasks tend to be loosely assigned to program directors. Some programs have developed more extensive placement support activities which generally are based upon explicit assignments being made to program faculty for execution. In other instances, institutional placement units are given a special assignment for allied health students. Strong support for placement is emphasized by community-oriented institutions such as junior colleges and vocational technical institutes. In many cases, even these approaches are insufficient to meet needs. Often, students are forced to rely on their own resources and initiative.

Efforts of affiliating health care agency staff to facilitate student placement are largely informal. They primarily involve either hiring affiliating students or referring them to other agencies. More active assistance usually is not felt to be warranted or feasible. Improvements in educational counseling and support to facilitate students' use of their education in related employment are a high priority for individual development and improvements in health care.

Alleviation of many difficulties confronting students in clinical education will be contingent on clarification of the objectives of clinical education and the students' role in the clinical setting. Improved clinical education content and credentialing also are important to student development.

RECOMMENDATION

Recommendations presented in the following section are designed to overcome or reduce the difficulties and problems experienced by allied health students during their practicum.

11. THE STUDENT'S ROLE IN CLINICAL EDUCATION SHOULD BE ARTICULATED BASED ON EDUCATIONAL OBJECTIVES

As discussed in the preceding section, many difficulties experienced by allied health students stem from uncertainty concerning the student's role in clinical education. Delineation of clinical education objectives will provide a basis for clarifying the student's role in the clinical setting. Articulation of this role will provide guidance for students, clinical educators, and health care agencies by prescribing expected student behavior in the clinical setting.

Requirements for students in different types of clinical settings should be spelled out in terms of the objectives. Clinical activities which are learning experiences--whether involving service or "housekeeping"--should be identified and related to the development of required competency. Guidelines should also be defined for student assumption of service responsibilities and interactions with clinical staff. This delineation should describe varying degrees of staff involvement in clinical education but provide clear channels for students to obtain direction. Alternatives should be identified for special circumstances.

Educational program sponsors bear the major responsibility for clarifying the student's role. Their efforts to formally define the student role should be supported by professional association guidance.

12. GREATER EFFORT SHOULD BE MADE TO IMPROVE THE QUALITY OF AVAILABLE INFORMATION ON CLINICAL EDUCATION

Information about clinical education in allied health should realistically portray opportunities and requirements. The various participants in clinical education should cooperate to improve the availability and accuracy of such information. Means should be explored to monitor information quality to ensure that students and practitioners are accurately informed. Accuracy, comprehensiveness, and currency should be given greater emphasis in promotional and descriptive materials.

The availability, formatting, and distribution of information on health manpower needs should also be improved through cooperative efforts by program sponsors and professional associations. Clarification of terminology and common usage would enhance information utility for determining and interpreting multioccupational mobility.

Each educational program should be responsible for apprising students of the requirements associated with educational preparation for different occupations. Such requirements include those for clinical affiliation and for certification and licensure. Students should also be given accurate descriptions of occupational functions and the merits and potential of various occupations. Programs should ensure that all promotional materials used--from whatever source--provide all needed information. Activities such as recruitment and counseling should stress the same principles.

Professional associations should stimulate the promulgation of current and accurate occupational information. Meaningful identification of job composition in different settings would enhance student decisions and program guidance. While providing support for program efforts, audiences outside educational spheres of influence should receive special attention from professional associations.

Government at the Federal and state levels should provide comprehensive information regularly on job availability by level and by occupation as well as associated salaries. The Federal Government should direct its efforts to national trends, particularly in emerging occupations. Coordination between states on a regional basis and at the Federal level would improve the currency and availability of information.

13. ALTERNATIVE MECHANISMS FOR STUDENT FINANCING OF SPECIAL CLINICAL EXPENSES SHOULD RECOGNIZE INDIVIDUAL, HEALTH CARE, AND SOCIAL NEEDS

Development of methods for student financing which meet individual and social needs is a challenge to clinical education and higher education in general. From this viewpoint, the appropriateness of portable grants, that is, those which go to individuals rather than institutions, should be carefully considered within the context of clinical education. Portable grants have been recommended as an effective way for society to finance individual education and stimulate educational change.* States, in particular, should explore this financing channel.

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*Frank Newman, et. al., Report on Higher Education, U.S. Department of Health, Education, and Welfare, March 1971.

Increasing the availability of government-supported loans for clinical education offers immediate potential for increasing health manpower preparation. Precedents for designated financial assistance currently exist at both the Federal and state levels for some categories of health manpower as well as other groups such as teachers. Extension of loans to allied health students could be provided by amendment of present legislative or administrative provisions.

Eligibility stipulations for clinical education loans should be based upon special financing requirements and student needs. Forgiveness provisions for a portion or all of the repayment requirements following service in designated areas of the country or the state should be considered. Such provisions would stimulate improvements in allied health personnel maldistribution and benefit dedicated students. Any public financing program should be carefully evaluated as a basis for its continuance. The efficiency and effectiveness of different approaches should also be examined.

Expansion should be sought in private sources for student financing. Development of greater association and foundation support should be explored by educational programs and the ASAHP, as a disinterested party. At a minimum, programs should be familiar with the details of all available sources for student financing, particularly modifications and changes.

14. STUDENT SCREENING AND SELECTION SHOULD EMPHASIZE INDIVIDUAL CAPABILITIES FOR CLINICAL EDUCATION AND THE NEED FOR CLINICAL EXPOSURE

Definition of requisite entry competencies for different stages of clinical education, as suggested in Chapter III, will provide an objective basis for screening and selection. The mechanics of screening should be improved to ensure that students possess requisite intellectual, physical, and psychological capabilities. In addition, improvements should be designed to minimize student and public misunderstanding of selection requirements and processes.

Existing clinical competency of individuals should be recognized to ensure that students are not required to relearn knowledge, skills, and attitudes and to expedite preparation of allied health workers. Potential competency should be emphasized in screening to discourage students from embarking on specialized preparation in unsuitable fields.

Required entry competencies should be communicated to applicants, referral sources, and concerned groups. Systematic procedures for initial screening should include some exposure to a clinical setting. For example, applicants might spend a short time--two to three hours--in a clinical unit with members of the educational program faculty who could answer questions and assess the student in a standardized manner. Variations of this technique have been implemented by some programs with great success.

Current efforts to develop measures that indicate physical and attitudinal potential for clinical education and health practice should be expanded. Association or government sponsorship would be a major stimulant to development in this area. In the interim, initial assessment procedures should integrate input from multiple sources, for example, two or more test batteries or two or more interviews.

Early exposure to characteristics of the clinical environment is crucial to screening students for clinical practicum assignment. Such exposure will help ensure that students who lack necessary capabilities are redirected to more realistic occupational goals. Students having potential in their chosen fields will obtain a better understanding of their career, which should stimulate competency development. Implementation of orientation experiences similar to the clerkships in occupational and physical therapy should be investigated.

15. SPECIALIZED ADMISSION COUNSELING AND DEVELOPMENTAL ALTERNATIVES SHOULD BE AVAILABLE TO ALL STUDENTS

Programs should ensure that students have access to supportive services such as specialized evaluation and counseling for program entry. These services can guide students to more realistic appreciation of their capabilities relative to clinical education and occupational requirements. Such provisions are crucial where students have limited experience with health service operations, organized education, or different populations. Loss of time, money, and self-esteem by students can be minimized by redirection prior to failure. The practice of open admission would be improved by the availability and use of such services.

Developmental opportunities might include special exposure to service populations with divergent economic and cultural characteristics. Developmental courses should be reinforced, for example, by more attention to health-related subject matter or awarding credit for completion. Alternatives to organized courses should be explored. Individual mentors might be assigned to guide and reinforce students in their progress through different courses. Self-instruction sequences also deserve increased attention as an avenue to development.

Meaningful developmental alternatives should be stressed by all participants in clinical education, including health care agencies. Agency employees would accrue substantial benefits from such provisions. Demonstrable efficacy, however, should be prerequisite to widespread implementation of specific approaches.

16. EDUCATIONAL INSTITUTIONS AND HEALTH CARE AGENCIES SHOULD GIVE GREATER RECOGNITION TO THE LEARNING EXPERIENCES THE OTHER PROVIDES

Provisions for reciprocal recognition of learning by both participants in clinical education should be improved to enhance mobility. Recognition of the learning which occurs at different educational and occupational levels also should be improved. Such recognition is important to facilitating student transfers between educational institutions. Occupational mobility is also contingent on acceptance of diverse learning situations by professional associations and on increased educational articulation. Educational articulation has been defined as:

> "A process which, at least, provides a continuous flow of students from grade level to grade level and from school to school. Implicit in this process is the need to systematize the activities influencing student progress. In its broadest definition, articulation also refers to the interrelationships between schools and colleges, quasi-educational institutions, and other community organizations--all activities that affect the movement of the student."*

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*S. M. Burt, An Overview of the Dilemma of the College Undergraduate Transfer Student: Implications for National Policy Relating to Higher Education, U. S. Department of Health, Education, and Welfare, Office of Education, Federal Interagency Committee on Education, November 1972, pp. 2-3.

In this context, meaningful academic credit should be provided for learning achieved through organized clinical education across occupations, levels, and institutions. Means to provide similar credit for on-the-job learning should be expanded. At the same time, acceptance of credits for both general and clinical education should be systematized across institutions.

17. EDUCATION PROGRAMS SHOULD ASSUME RESPONSIBILITY FOR PROVIDING FOR AND ASSIGNING STUDENTS TO CLINICAL SITES

Providing for and assignment of students to clinical sites should be the responsibility of allied health education program sponsors. Program responsibility for this function is considered essential for coordinated scheduling of clinical education as discussed in Chapter V. This approach will contribute to increased availability of clinical affiliation capacity.

Student assignments should recognize individual student characteristics, ability, and needs. The capabilities of health care agencies should also be considered in making more effective student assignments. Professional associations and government should support efforts designed to improve methods of making student assignments.

18. GUIDANCE SHOULD BE FORMALIZED AS AN INTEGRAL COMPONENT OF CLINICAL EDUCATION TO ENSURE RESPONSIVE COUNSELING AND EVALUATION

Allied health education programs should set up formal procedures to ensure that students receive necessary guidance. These procedures should be operable throughout a student's career from admission to placement. In addition to providing students with personal counseling, meaningful evaluation and feedback on individual progress are essential.

Certain provisions are minimal to provide effective student guidance. Evaluations should be frequent, emphasizing the approaches discussed in Chapter III. Within programs, faculty members responsible for guidance should be clearly identified. The types of assistance obtainable from different sources should be defined and communicated to students.

Guidance should be reinforced for students in clinical settings. The nature of the guidance function should be clearly articulated by educational programs in conjunction with their clinical affiliates. Responsibility for counseling and other assistance should be specifically allocated, as should provisions for evaluation.

19. ALLIED HEALTH PROGRAMS SHOULD ASSIST THEIR GRADUATES IN FINDING EMPLOYMENT

Students should receive assistance from educational institutions in obtaining employment in the occupation for which they have studied. Programs should develop channels for providing students with requisite information concerning entry into the labor market. This information should be maintained with major employers on a current basis. Access to institutional placement services should be arranged for all allied health students.

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This chapter has identified the major problems experienced by allied health students as they complete their clinical practicum. Means for alleviating these problems have been recommended. The ineffective way in which clinical education is conducted at present presents a major problem to the allied health student today. To many students the practicum is a very difficult time because of the many uncertainties which exist. The student experiences many problems which are totally unique to the practicum. These problems should be addressed by institutions sponsoring allied health programs if the clinical education phase is to continue as a requirement.

VIII. FINANCING CLINICAL EDUCATION

The way in which clinical education has evolved has resulted in little attention or concern, until recent years, to the cost of clinical education or to the sources for financing it. Now, however, rising costs of health care and health manpower education have focused attention on the question of who should pay for clinical education. This question applies equally to medicine, dentistry, nursing, and the allied health occupations.

There is, and has been, widespread agreement that the cost of education should not be borne by the ill patient. There are, however, divergent views on how the cost should be met. On the one hand, there are those who believe that clinical education primarily benefits students in preparing them for employment and therefore students should bear the cost. On the other hand (and the prevailing opinion), it is held that society as a whole is the principal beneficiary of education and therefore should bear the principal cost of education, including clinical education.

Even if it is accepted that the cost of clinical education should be borne by society, it can be argued that the preponderance of health care paid for by third-party governmental and prepayment plans effectively distributes costs of clinical education throughout society. Opposing this view is the argument that third-party payers are not an appropriate or equitable structure for distributing educational costs.

The issues and views regarding costs and sources of financing are, in effect, matters of public policy and subject to continuing debate. In order to provide pragmatic and workable assumptions for this study, it was agreed, in short, that: (1) the sources of funding for education should be the sources for the learning component of allied health clinical education, and (2) the sources of funding for health care services should be responsible for the service component.

This chapter examines major issues related to financing clinical education and recommends actions designed to bring about clearer understanding and at least partial resolution of the issues.

1. ADEQUATE FINANCING FOR CLINICAL EDUCATION IS PERCEIVED AS AN INCREASINGLY ACUTE PROBLEM

In recent years, health care institutions have come under considerable pressure to control and check the increasing costs of their services. The costs of clinical education programs, in particular, are the cause of considerable concern. Clinical education has been subject to the rising costs that have impacted on most aspects of our society. The increasing complexity of allied health technology, however, has accelerated the general trend. Especially critical elements in the increasing cost of clinical training have been noted previously.

(1) Growing Pressures for Overall Cost Containment Have Forced Health Care Agencies To Reexamine Their Role in Financing Clinical Education

Traditionally, hospitals and other health care agencies have assumed the costs of clinical education, providing all necessary resources and student stipends as well. It was assumed that the value of student services, the value of a training program as a recruitment device, and the intangible benefits to patient care of in-house educational activities were sufficient to justify the visible expenditures for allied health training programs. However, the costs of clinical education were (and are) buried in the costs of delivering health care, and little has been done to determine either what these costs are or who should pay them.

In recent years, however, spiraling costs of health care have forced hospitals to carefully examine the nature of their overall costs and to seek sources other than patient care revenues to finance nonpatient care activities. Much has been written about public concerns and pressure for cost containment of health care services which need not be reiterated here. This public concern is reflected in actions of the Federal Government, state regulatory agencies, third-party payers, and consumer groups. Thus, the need to ascertain realistic costs of clinical education, identify appropriate sources of financing, and assure efficient use of financial resources is acute among health care agencies.

(2) Costs of Clinical Education Can Be Presumed To Have Escalated at a Rate Comparable to Health Care Services Costs

There is little reliable information as to the total costs of allied health clinical education, and this study has found no data which show historical cost trends. Nonetheless, several factors point to the conclusion that clinical education costs have risen at a rate relatively comparable to the rate of increase in costs for health care. Among these factors are:

- Growing complexity and specialization in the allied health occupations have led to higher qualification requirements for clinical educators and placed ever-increasing requirements on physical resources.
- Emphasis on assuring sound educational experience during the practicum and avoiding "exploitation" of clinical students has decreased the service benefits provided by clinical students to health care agencies.

Another indication of the high cost of allied health education is the variation in costs among programs and particularly the differences between health and non-health programs. In his article on "Responsibility for Management and Financing," Journal of the American Hospital Asssociation, March 1973, E. Martin Egleston reports:

> "The cost of education for a health care worker is considerably greater than that for a student in liberal arts. At one community college, it was determined that:
>
> - Nursing costs were $71 per credit hour.
> - Dental hygiene, $50 per credit hour.
> - Clinical laboratory or radiologic technician, $48 per credit hour.
>
> In contrast, English, sociology, and biology courses cost $16 per credit hour."

Exhibit XI, following this page, provides cost ratios calculated for course clusters at another community college. The exhibit shows major differences between allied health clusters and in comparison to other educational areas.

It should be noted that the assumption stated on page 225 concerning the direct and indirect benefits received from conducting in-house educational programs is less apt to be valid

EXHIBIT XI

COST RATIOS CHARACTERISTIC OF ALLIED HEALTH CLUSTERS COMPARED TO OTHER EDUCATIONAL AREAS*

Course Area and Cluster	Ratio
Allied Health	
Dental Assisting	155.4
Dental Hygiene	303.9
Dental Technology	218.0
Inhalation Therapy	440.6
Mental Health	133.2
Medical Records	109.5
Nursing	358.8
OT	291.2
PT	413.9
X-Ray	325.8
General Studies	
Biology	127.9
Chemistry	95.2
History	71.4
Political Science	61.2
Sociology	49.8
English	88.1
Psychology	96.1
Business-Engineering	
Engineering	151.1
Drafting	201.2
Secretarial	130.7
General Business	59.1

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*The ratios are based on an average collegewide cluster cost of $100 for salaries, including those paid to clinical educators in some allied health programs.

as training costs, spurred on by rising educational standards, escalate. This creates further pressure to seek new revenue.

(3) Third-Party Payers Are Scrutinizing Costs of Education More Closely

Most third-party payers allow recovery of inpatient costs but limit the amount hospitals can recover for other health care costs including education. While third-party payers do pay some "provider educational costs," they are subjecting the costs of education to increasing scrutiny. One aim is to reduce the higher per-patient day costs generally experienced by hospitals with education programs.

In general, third-party reimbursement formulas have significant impact on cost allocation practices within health care institutions. For example, there is a tendency to maximize allocation of indirect costs to inpatient care. Cost of clinical education may be obscured in this process.

In some areas, pressures are more acute. Health care executives repeatedly express fears that similar actions may take place elsewhere with failure to identify alternative sources of revenue.

(4) High Costs Are a Major Factor in the Declining Availability of Clinical Training Facilities

Because of pressures for cost reduction, many hospitals are reducing their commitments to allied health education or are refusing to expand commitments. A major community hospital covered during site visits of the study team, in fact, is abandoning educational programs because of pressures for cost reduction. Similar pressures are motivating other health care agencies including medical centers to contemplate selective elimination of clinical education, with allied health a prime candidate. Limitations on net revenues have forced some hospitals to call on capital reserves to support education and other nonpatient care programs that are not self-supporting.

Educational institutions, in some locations particularly, are experiencing difficulty in obtaining clinical affiliations as previously discussed. Increased costs are a prime cause of the premium on space for clinical education.

Quality in training, likewise, is expensive and becoming more so. There is a widespread view among knowledgeable personnel that financial constraints are a major factor in what they perceive as a growing obsolescence in training. This view holds that more complex facilities, more highly trained (updated) instructors, and more sophisticated software are required to merely maintain quality, relative to an escalating technology. The increasing cost of these resources is not at this time being offset by improvements in efficiency and effectiveness of training.

(5) There Is Considerable Alarm Over Prospective Reductions in Federal Support for Allied Health Education Programs

The Federal policy of providing fairly significant financial support to institutions for the conduct of allied health education programs is apparently coming to an end. Two arguments are frequently heard which attempt to justify the need for continued Federal funding:

- The need to improve educational program quality
- The high cost of these programs relative to education in general and the difficulty in meeting these costs from non-Federal sources

The argument concerning the need to improve quality is not overwhelming. There is not conclusive evidence that the quality of training is sufficiently poor, in government's view, to warrant institutional support by government. This study is an attempt to examine evidence on the quality issue and determine whether or not it can be solved with or without substantial Federal help. As to the higher relative cost of such programs as a justification for Federal support, there is insufficient evidence from which to conclude what the Federal policy should be.

Available evidence indicates that relatively few educational programs would fold without Federal support (except MDTA programs) but that "quality" would suffer and enrollments might decrease.

(6) Federal Funding Has Had a Much Greater Impact on the Didactic Component Than on the Clinical Component

A survey was completed in 1971 on the "Impact of the Allied Health Basic Improvement Grant Program on Health Education Programs." These were capitation or formula grants offered by HEW to certain types of allied health programs for basic occupational preparation. Only institutions of higher education were eligible grant recipients; no payments were made to health care agencies providing the practicum phase of these programs. Among notable findings reported by respondents to the survey, these Federal capitation grant funds represented 19% of the total reported 1967-1969 expenditures by colleges and universities for those allied health programs which received grants. In the recipient group, only 11% of total collegiate program expenditures were for practicum, and only 8% of the basic improvement grant funds were used for practicum.

Thus, this type of Federal funding did not benefit clinical education to a degree comparable to the benefits for didactic components. This apparently resulted because there was no constraint on educational institutions to apply funds to practicum. For individual reasons, the colleges did not choose to apply the funds received in equal proportions to the didactic and practicum components.

2. OPINION HOLDS THAT COSTS OF CLINICAL EDUCATION SHOULD BE BORNE BY EDUCATIONAL FUNDING SOURCES AS OPPOSED TO THOSE FOR FINANCING HEALTH CARE

Rising costs of health care and health manpower education have focused attention on the question of who should pay for clinical education. This question is equally applicable to medicine, dentistry, nursing, and the allied health occupations.

There is, and has been, widespread agreement that the cost of education should not be borne by the ill patient. There are, however, divergent views on how the cost should be met. On the one hand, there are those who believe that clinical education primarily benefits students in preparing them for employment and therefore that students should bear the entire cost. On the other hand, prevailing opinion holds that society as a whole is the principal beneficiary of education and therefore should bear the principal cost of education, including clinical education.

Even if it is accepted that the cost of clinical education should be borne by society, it can be argued that, since the preponderance of health care is paid for by third-party governmental and prepayment plans, this effectively distributes costs of clinical education throughout society. Opposing this view is the argument that third-party payers are not an appropriate or equitable structure for distributing educational costs.

The issues and views regarding costs and sources of financing are, in effect, matters of public policy and subject to continuing debate.

3. A CRITICAL NEED EXISTS TO REAPPORTION THE FINANCIAL BURDEN AMONG THE VARIOUS FUNDING SOURCES AS WELL AS TO ACQUIRE ADDITIONAL FUNDS

Previous chapters have considered the questions and issues of responsibility for content, management, and resources for clinical education. The notion that greater responsibility should rest with educational institutions supports the rationale that the burden of financing should be shifted to them. This, coupled with the growing monetary constraints placed on health care agencies and the increasing costs of practicum, makes the development of alternative means of financing an urgent matter.

There are, of course, other ways of attacking this dilemma such as:

- Reducing the number of students
- Minimizing the clinical component, thereby reducing the length of the education period
- Improving the effectiveness and efficiency of clinical education within existing resource limitations

It does not, however, appear possible to maintain reasonable standards of training (relative to the increasing demands on health workers) without significant increases in expenditures for clinical education. Alternative sources of funding are being sought, and present sources are being asked to increase their contributions.

(1) Students Are Being Required To Bear Higher Costs of Clinical Training

In the search for additional funding, several trends are apparent:

- Student stipends are being curtailed.
- Student tuition and fees are being instituted (or increased where they already exist), particularly for hospital-sponsored programs but also for clinical practicum provided under affiliation with a college or university.
- Ancillary support such as housing is being curtailed, or at least some payments are being required.

At the same time, the educational institution may or may not be charging tuition for clinical practicum experiences. Where tuition is charged, it may be based on practicum credit hours, contract hours, or a fixed price for a given program.

While the concept of differential tuition charges is gaining adherents, there is also considerable resistance to "a la carte" costing. The State of Virginia, for example, examined differential tuition charges and concluded that the practice was not necessary because higher costs are recovered eventually through taxes. Furthermore, the difficulty of conceptualizing proper costs made the task exceedingly complex.

(2) Educational Institutions Are Being Increasingly Pressed To Absorb the Costs of Clinical Training

As an alternative, some health care institutions are looking increasingly to educational institutions with which they are affiliated to provide more financial support for the clinical portion of the educational process. At present, virtually every type of financial arrangement imaginable exists between affiliated health care and educational institutions. These arrangements include:

- No compensation by either party (still the most prevalent arrangement)
- Compensation of the educational institution by the health care facility, usually for faculty costs in support of clinical education
- Compensation to the health care facility by the educational institution for some or all costs of instructors, space, materials and supplies, etc.
- Compensation by the educational agency of staff in the health care agency for service as clinical education instructors

In all of the above instances, the health care institution may or may not be providing stipends and/or charging tuition or fees.

Despite the greater number of arrangements in which no compensation is paid by either party to the other, there does appear to be a growing trend toward:

- Payment by educational institutions to health care facilities for some if not all of the costs of clinical education
- Payment of tuition by students to educational institutions for their clinical education

4. THERE IS LITTLE ORDER OR COORDINATION AMONG FUNDING SOURCES FOR CLINICAL EDUCATION

With the movement toward funding clinical education from more traditional sources for education, a confusing and increasing array of organizations and agencies are providing support--if only in meager amounts.

(1) A Variety of Federal Agencies Have Provided Recent Support for Allied Health Education, But With Little Coordination

Federal support for health manpower development and education has been provided since the mid-1930's and has increased significantly in the last decade. The diversity of occupations and institutions involved, the wide range of their goals, and differences in student populations and funding authorizations have resulted in the provision of support by various Federal agencies. These agencies include:

- Department of Health, Education, and Welfare
- Department of Labor
- Department of Agriculture
- Department of Defense
- Department of the Interior
- Department of Justice
- Atomic Energy Commission
- Appalachian Regional Commission
- National Science Foundation
- Office of Economic Opportunity
- Veterans Administration

Within HEW alone, five organizations provide significant individual and institutional support governed by different regulations:

- National Institutes of Health
- Health Resources Administration
- Health Services Administration
- Food and Drug Administration
- Office of Education

Although better planning and coordination of Federal financial support is an obvious need, the large number of agencies and programs involved and the prevalence of narrow categorical funding have precluded effective efforts. To date, coordination of Federal programs with regional, state, and local agencies has been largely ineffective.

The continuing difficulty in coordinating Federal programs at the regional, state, and local level stems in large part from legislation which establishes categorical training grants. Any legislation which applies to health manpower usually has a provision for training for specific types or categories of manpower. Categorical training grants are strongly supported by the various constituencies involved. For example, when the Federal Government attempted to enact a comprehensive public health manpower bill that would combine many types of training into a single program, it was opposed by the Schools of Public Health. They did not want to be supported through omnibus legislation and omnibus appropriation. Instead, they wanted categorical fund support.

In a postive view, steps are being taken to better coordinate Federal programs at the state and local level. The present decentralization of authority for fund allocation to the various regional offices is a major attempt in this regard. The theoretical advantage of regionalization is that, by delegating decision-making authority for allocating funds to the region, better decisions will be made.

Under the former centralized approach, funds were not allocated by region, and applicants competed nationally.

Under the decentralized approach, funds are allocated by region. Applicants for funds from within the region compete only with other applicants in the region. The problem with a decentralized program is determining the amount of funding to be allocated for each region. Usually it is based on experience of previous years. Thus, it may do little to redistribute funds.

A second step being taken to improve Federal program coordination at state and local levels is for the Federal agency to refuse to accept any grant application unless it has been endorsed by the local comprehensive health planning agency.

These are the steps being taken to improve coordination. In allied health education, even before you get to a state of disagreement over where to put your support, you get disagreement on what and where your manpower needs are. In this regard, the Federal Government is trying to assist the states in strengthening their resource analysis in planning.

(2) Although Several States Are Providing Support for Clinical Education, There Is No Clear Pattern or Assurance of a Stable Base of Support

All states, of course, support allied health education to the extent that it takes place in state-operated institutions and draws upon the general budgets of those institutions. In addition, several states have specific policies and programs for support of clinical education for allied health, usually directed toward basic occupational preparation. State programs may be administered through the system for higher education or may be disbursed as grants to applicant educational or health care institutions. For example:

- Illinois provides allocations to private institutions for health education programs. During fiscal years 1970, 1971, and 1972, a total of $1.2 million in operating funds and $365,000 in capital funds were awarded to nonpublic allied health education institutions. Nearly two-thirds of these total funds were granted in 1972.
- Minnesota provided about $4.4 million in 1970 for support of allied health programs. This represents 31% of all funds (Federal, state, and local) allocated to allied health education. None of these funds were awarded to private institutions.
- Oklahoma is implementing an educational program budgeting system for state funding under State Regents auspices which currently recognizes differential requirements for all health education programs operated by the University of Oklahoma Health Sciences Center; budgeting criteria for other institutions provide for differential student costs on a program basis.

However, of these three examples, only Illinois is doing anything that is outside of the state educational system.

(3) Local Patterns of Financial Support Are More Confusing

The increasing numbers of junior and community colleges, public tax-supported hospitals, and a variety of other local public structures add to the myriad of alternatives for financing clinical education. It is virtually impossible to discern any general patterns because of lack of comprehensive data on local funding. A prevailing tendency is funding on an institutional basis. Individual institutions have considerable latitude in determining their requirements and how the dollars will be allocated to various programs.

5. LACK OF AN ACCEPTED METHODOLOGY FOR DETERMINING EDUCATIONAL COSTS IS A MAJOR BARRIER TO RESOLUTION OF FUNDING PROBLEMS

Very limited information is available from which to determine the actual cost of clinical education despite growing anxiety on the part of both educational and health care leaders. Some significant attempts have been made, however, to determine which costs should be charged to education and which to patient care.

(1) Clinical Training Facilities Are Attempting To Identify Education Costs More Accurately

A number of forces are at work to encourage health care facilities to determine their real costs of education. These were discussed previously in this chapter and include:

- The pressure of third-party payers
- The need to separate educational costs from service costs in order to justify appropriate educational funds

The general management need for valid basic financial data provides additional stimulus.

As a result, there is considerable interest among managers concerned with allied health programs in the development of an appropriate methodology for determining educational costs. Any remedy of the problems of financing clinical training is partially dependent on the development of a sound cost accounting methodology.

(2) Institutions Are Still Grappling With the Methodological Problems of Determining Clinical Education Costs

While there have been several efforts to grapple with the methodological problems of determining the costs of clinical education, a model is not yet available. Two such efforts, however, are worth noting:

- The work of the Association of American Medical Colleges has produced a report on Guidelines for Academic Health Center Cost Allocation Studies. These guidelines are useful conceptually to health care institutions but do not answer the basic question as to what costs are allocated or charged to education and what costs are allocated or charged to patient care.

- A recently completed study at Hartford (Connecticut) Hospital indicated that education programs contributed significantly to the quantity of hospital services.* In reviewing the results of the study, Freymann and Springer state: "We draw no universal conclusions...It is an unconfirmed experiment. For this reason, we urge other institutions to take a similar approach and see what their own result would be."**

In a recent article in the Association for Hospital Medical Education Journal, Harold Maysent states:

> "The costing problem is complicated by the lack of definitive criteria for the allocation of indirect costs. Direct expenses such as faculty salaries, educational supplies, laundry, memberships, etc., are relatively simple to compute."

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*Hartford Hospital, Hartford Hospital Study of the Cost of Education Programs, Year Ended September 30, 1971, Hartford, Connecticut, 1972.

**John G. Freymann and John K. Springer, "Cost of Hospital-Based Education," Hospitals, Journal of the American Hospital Association, Vol. 47, March 1, 1973, p. 66.

Information gathered in the course of this study indicates that even direct expenses *attributable to education* have been difficult to determine in some instances. Where instructional personnel divide their time between service and educational responsibilities, considerable unease exists regarding the problem of appropriately and conveniently allocating time. Similarly, in many locations, supply procedures present problems for readily identifying and allocating the costs of supplies according to use.

(3) The Problem of Defining the Value of Services to Patients Derived From Educational Programs Is a Principal Deterrent to an Acceptable Methodology for Cost Allocation

The problems of allocating both direct and indirect costs, however, do not appear to be insurmountable. What may be more difficult, considering the diversity of opinion in the field, is the determination of the value of the different services to patients and health care institutions derived from clinical education programs.

In the Hartford study, it was found that, if all education programs in that facility were abolished, service replacements would cost more to provide the same quality of essential hospital services. However, the study assumed a significant amount of fixed indirect costs which were already committed and therefore would be (in theory) diminished if education were abolished.

Most allied health clinical education programs provide service benefits to the institution, including:

- Service in support of patient care
- Service in support of staff development
- Services in support of manpower recruitment, selection, orientation, and retention
- Enhanced professional status which accrues to the institution
- Improved community relations

The Hartford study made an encouraging start in measuring the value of these services on a "cost of replacement" basis.

Such a separation of net educational costs from service costs may be essential. As Maysent states in the aforementioned article: "In the future, support for service may come from one source and support for education from another."

(4) The Cost of Clinical Education Varies Widely

In spite of the lack of reliable data, there is considerable evidence in the form of knowledgeable opinion that not all institutions are equally cost-effective in their conduct of clinical training. There is also reason to suspect, using the concept of balancing educational cost against the value of service rendered, that certain of the more service rendering allied health programs (such as radiologic technology and inhalation therapy) are less costly than others, if not actually profitable. In other words, students in these programs render a considerable amount of service during their practicum which otherwise would need to be provided by regular employees.

The apparent wide variation in costs of education from institution to institution and program to program may present a problem for any national sampling of clinical training costs. Until a standard methodology is established to provide a uniform basis for cost determination, however, no valid sampling is possible.

6. A BASIC, MUTUALLY ACCEPTABLE RATIONALE SHOULD BE DEVELOPED TO DISTINGUISH SERVICE AND NET EDUCATIONAL COSTS OF CLINICAL EDUCATION

Lack of a methodology for allocating service and educational costs that is acceptable to educational institutions, health care agencies, and funding sources has contributed to the confusing structure for financing clinical education. Research and study have been limited, although some important beginnings have been made. A set of principles is emerging, however, which should be recognized as the basis for the development of a standard methodology for cost allocation.

Several methods for resolving the problems in financing have been considered. They reflect the conviction that the financing of clinical education must be based on a view of the whole system. The public rather than the student must bear the brunt of the cost--the question is how and where the burden should be placed.

(1) A Methodology for Determining Net Educational Costs Should Be Adopted

Emerging from previous studies are a concept of net educational costs, its basic parameters, and its desirability. Analysis of empirical evidence supported by knowledgeable judgment indicates that this concept can and should be accepted as an equitable and manageable approach to defining costs for clinical education in allied health.

The concept can be expressed in terms of the formula:

NEC = GEC - VOS, where:

- NEC--Net educational costs
- GEC--Gross educational costs, consisting of:
  - Direct costs--faculty costs (allocated according to time devoted to education activities), supplies (allocated according to use for education), etc.
  - Indirect costs--facility and utilities costs (allocated according to space utilization), administration (prorated according to, say, direct labor costs), etc.
- VOS--Value of services, estimated on the basis of replacement costs

The concept of net educational costs as expressed above takes into account that students in clinical education do deliver services. Most importantly, it suggests that the service rendered should be valued on the basis of the estimated cost to replace that service if the educational program did not exist.

(2) Methods for Determining Generic Cost Elements in Clinical Education Should Be Refined and Extended

The elements of gross costs for clinical education are subject to some argument, but it is generally agreed that they should include:

- Direct Costs such as:
    - Faculty and direct staff services
    - Materials and supplies
    - Software
    - Medical/legal liability
    - Contractual costs
- Indirect Costs such as:
    - Space--classrooms, laboratories, offices, housing, etc.
    - Utilities
    - Food service
    - Maintenance and housekeeping
    - General administration

Many educational and health care institutions already do a reasonable job of identifying direct costs. Acceptable cost allocation methods in current use should be refined and extended to better capture indirect costs of clinical education.

(3) Major Efforts Should Be Directed at Developing Methodologies for Identifying the Value of Services

If the concept of net educational costs is to be useful, then it is essential to determine the value of services and benefits derived from clinical education. Major effort is needed on the part of the educational institutions and the health care agencies to develop methodologies for determining these values. If replacement cost is used as a basis, the elements of value of services should include:

- Services for patients, taking into account both the amount and quality of service rendered by students and by faculty from the educational institution.
- Services and benefits for patient care staff, such as personal development resulting from association with students, faculty, and the educational institution. Additionally, the support for staff continuing education and in-service training should be considered.
- Services and benefits accruing for recruitment selection, orientation, and retention of manpower.
- The intrinsic value arising from recognition of professional status and the contribution to sound community relations. Although assignment of value to this element is largely judgmental, it is a real value not unlike the "goodwill" assets recognized in commercial organizations.

The value of service elements should be estimated on the basis of replacement cost, in other words, the estimated cost to replace these elements at a comparable level, scope, and quality.

(4) Detailed Major Studies To Develop Standard Cost Data by Occupation Should Receive High Priority

Acceptable methodologies should be developed for determining net educational costs, and a sampling should be conducted to derive regional and national norms. The scope of investigation should be directed to individual occupations and should include:

- Development of bases or guidelines for determining direct and indirect costs, i.e., gross educational costs
- Development of bases or guidelines for determining value of services as a function of estimated replacement costs
- Extensive sampling of affiliating health care agencies
- Development of a reasonable methodology for deriving net educational costs using gross costs and value of services
- Testing of the methodology by occupation and in a variety of health care agencies to ascertain its validity

The basic aim of such studies should be to develop norms or ranges of net educational costs by occupational, institutional, and regional classifications. The results would facilitate development of an empirical data base for analysis and decision.

7. FINANCING NET EDUCATIONAL COSTS SHOULD BE BASED ON GENERAL PUBLIC POLICY TOWARD FINANCING POSTSECONDARY EDUCATION

The net cost of clinical education should be viewed as part of basic occupational preparation regardless of whether it is received through simulation in a college laboratory, in a health care setting, or in any other location. In general, then, financing net educational costs of clinical education should involve:

- First and primarily, state and/or local government funds specifically earmarked for this program and channeled as appropriate through educational or health care agencies and institutions
- Secondly, charges to students commensurate with the value of the training to the student and with the charges made to students for training of similar value in other occupational fields*
- Some Federal subsidy of selected costly and essential allied health programs through direct aid to educational institutions

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*Charges to students for allied health clinical training should be in keeping with expected earning power in these occupations, which on the whole is moderate.

The main points of this recommended pattern for the financing of clinical education is that the costs of clinical training should be paid by the health care institution only to the extent that the institution benefits economically from services rendered by students. All other costs of clinical education (net educational costs) should be met from those sources of revenue that are used to support postsecondary education in general.

In summary, financing net educational costs for allied health manpower should be consistent with general public policy regarding education for other occupations requiring comparable formal preparation.

8. THE PROGRAM SPONSOR SHOULD BE RESPONSIBLE FOR THE NET EDUCATIONAL COSTS OF CLINICAL EDUCATION

Net costs of clinical education should be borne by the sponsoring educational institution whether college, university, hospital, etc., out of funds intended for higher education. Thus, sources of funding for net educational costs would largely be from taxes and from students: first, from Federal, state, and local government, i.e., from society through the tax base; and, second, from student tuition and fees. In addition, other sources of educational revenues such as endowment and general gifts should be allocated to allied health programs in similar proportions to other programs.

9. HEALTH CARE AGENCIES SHOULD BE RESPONSIBLE FOR FINANCING THAT PORTION OF CLINICAL EDUCATION WHICH RENDERS SERVICES OF VALUE

Responsibility for financing services rendered to the health care institution should be assumed by the institution. Cost equivalents should be established for the service benefits derived from clinical education and these costs treated as service costs. Estimated replacement cost should be the basis for determining service value, as discussed earlier. As a result, the primary sources of funding for service costs would be hospital or other health care agency revenues, largely patient third-party payers.

* * * *

In summary, only in recent years have the costs and appropriate structure for financing clinical education been a matter of widespread concern. Rising costs and tightening sources for financing have made reexamination of financing and sources imperative. A major barrier has been the absence of an acceptable rationale and methodology for separating education costs and service values for clinical education. This chapter has set forth a basic rationale and suggested approach to arrive at "net educational costs." This concept can serve as a basis to identify the value of services rendered which should be borne by health care agencies and net educational costs which should be borne by educational institutions.

IX. RESPONSIBILITIES FOR ALLIED HEALTH EDUCATION

IX. RESPONSIBILITIES FOR ALLIED HEALTH EDUCATION

The previous chapters have identified major problems and issues in the clinical education of allied health manpower. The growth and increasing formalization of education, both for existing and for newly developing allied health professions, have been uneven and unsystematic. Without the direction provided by any recognized policy, the organizations involved in the education of allied health manpower, both governmental and private, have defined their own roles. As a result, many problems have not been solved effectively or have been almost entirely overlooked.

In this chapter, the question of how the various types of organizations involved should work together to improve clinical education is discussed. The roles of institutions of higher education, hospitals and other health care agencies, professional associations, local and state governments, and the Federal Government are examined.

A. EDUCATIONAL INSTITUTIONS

Whenever an educational institution sponsors a program for the basic occupational preparation of allied health manpower, it should accept responsibility for the provision of the necessary clinical education.

Institutions of higher education which sponsor programs in allied health have largely ignored the problems of providing clinical education, other than to affiliate with health care institutions for this purpose. The typical physical and organizational separation of the clinical experience encourages this detachment, but does not justify it.

Educational institutions are gradually attempting to strengthen the clinical education provided their students by better curriculum planning and upgrading the quality of clinical instructors. Where a sense of responsibility does exist among faculty, it has yet to be matched by financial commitments.

Educational institutions should improve their abilities to design, conduct, and evaluate the clinical components of their educational programs. Clinical education should be given the same level of attention and support as the academic phase of these programs. Educational institutions should accept responsibility for the clinical education provided to their students, including the way in which it is conducted and its quality.

In discharging this role, educational institutions have a responsibility to seek to improve methods of clinical instruction. They should also provide continuous evaluation of the need for, the quality of, and the results of the clinical education element in the various allied health curricula. Methods should be developed to ensure meaningful involvement of the affiliating health care institution, through such means as:

- Participation of affiliating agency in program planning and operating review
- Visits by educational institution staff to health care agency
- Submission of evaluation reports to health care agency

Educational institutions should accept the responsibility of funding their clinical education, to the extent that affiliating hospitals and other health care agencies are unable to defray net educational costs.

Personnel in the various allied health occupations are not well-matched to the racial and ethnic groups that they serve.

In various places in this report, the reader may infer that clinical education practices have hindered rather than helped efforts to increase the representation of minority groups in these occupations. The point deserves emphasis and comment. The nation is composed of many racial and ethnic subgroups, several of which encourage the preservation of a certain degree of cultural distinction. In addition, language barriers may prevent effective communication between patient and health worker, even when no language difficulties are apparent in ordinary circumstances. It seems obvious that quality health care cannot be attained without adequate representation of such groups in the work force. Apart from the concern over equal educational and employment opportunities for minorities, therefore, there is a clear reason for all authorities concerned with the clinical education of allied health manpower to examine standards and procedures from this point of view and to ensure that opportunities are created to overcome the marked under-representation of minority group members in, especially, the more highly-qualified occupations in this field.

B. HEALTH CARE INSTITUTIONS

Health care institutions, primarily hospitals, have played a longstanding and illustrious role in clinical education. Their role in the future should capitalize on their unique assets as the operational sites of health care delivery. At the same time, this role should minimize burdens on health care operations while providing an efficient synthesis with the activities of educational institutions.

Health care institutions provide a unique environment for clinical learning experiences that require involvement in the operational delivery of health services. They must continue to provide allied health students with an operational setting for those portions of clinical education which require such an environment.

Health care institutions have in-depth knowledge of the requirements for allied health manpower as a corollary of their need to staff different health care functions. This familiarity encompasses needs to develop new types of skills and manpower and those for updating previously acquired capabilities. These institutions should identify specific requirements for the basic preparation of allied health manpower. For some occupations, the hospital should have the determining role in planning and, for others, should transmit them to educational institutions as a foundation for the latter's planning. In addition, health care institutions should actively cooperate with their educational counterparts in planning programs that meet these requirements in an efficient manner.

Within the overriding objective of providing quality care and protecting the patient, hospitals (and other health care agencies) should carry out these recommended actions:

(1) Actively participate in academic programs for basic occupational preparation, in affiliation with institutions of higher education

(2) Operate or actively participate in nonacademic programs for basic occupational preparation

(3) Provide clinical elements of advanced, specialized, and continuing education

(4) Provide more effective formal or informal "internship" experiences for employees who are newly graduated from academic programs (in view of the trend to generalized training in such programs)

Health care institutions should actively support educational institutions in the provision of clinical education by assisting in the planning of clinical education and the provision of sites for student involvement in health care delivery, including required supporting resources.

Several principles, designed to promote a quality educational experience for the student in the clinical setting should be observed by health care institutions:

(1) Clinical faculty should be well qualified, i. e., fully proficient in current clinical techniques and capable of teaching these techniques and the relevant theory.

(2) Students should observe a clinical procedure and demonstrate their mastery of the knowledge required before undertaking the procedure themselves. If possible, they should also demonstrate their mastery of the required skills in a simulation, not involving a patient, of the actual procedure.

(3) When patient care is affected, students should carry out a clinical procedure only under the direct and continuous supervision of a clinical instructor or other qualified member of the staff, until the students have demonstrated proficiency in that procedure.

(4) Students should not be utilized to provide patient care.

Once they have mastered the procedures in question, the students should not provide patient care or service unless this constitutes a necessary learning experience, or unless this use of the students does not significantly retard or interfere with their educational progress.

Hospitals should continue to provide and meet the costs of necessary manpower training which is not sponsored by institutions of higher education.

The past few years have seen colleges and universities become much more active in providing vocational training for health manpower. It is not the intent of this report to suggest that this trend should continue, although neither is it the intent to suggest that it has already gone too far. It seems clear that the nonacademic preparation of health manpower will continue to be appropriate for many occupations. This type of program, whether located in a postsecondary vocational training institution, as a vocational specialty within a secondary educational institution, or as a freestanding program within a hospital or health care agency, should and will continue to play an important role.

This study has been drawn to focus on the education and training of those allied health occupations which appropriately evidence a degree of professionalism, because that is where the principal problems reside. Many of the problems that are cited have been generated or exacerbated by the movement of basic occupational preparation into institutions for higher education, and the relationships of these institutions with the health care agencies that provide the clinical component of education.

The reader of this report should not lose sight of the fact that there are allied health occupations for which it is reasonable and possible to offer basic occupational training in nonacademic settings. An academic degree should not be a *sine qua non* for health workers. In the interests of providing efficient staff, health care institutions should continue to exercise initiative where necessary in providing both basic occupational training and continuing education.

It would be unwise for an industry with such complex manpower demands to completely divest itself of control over the manpower production function. Nonacademic programs, controlled by and responsible to the specific needs of employers (as they are embodied in the health care institution) will, as long as they exist, provide a flexible, adaptive mechanism for meeting needs for specific skills.

These recommendations pertaining for hospitals and other health care agencies presuppose the following:

- The purpose of clinical education is to:
  - Impart clinical skills
  - Impart (or confirm that the student has acquired) relevant theory and specific knowledge
  - Relate skill and knowledge
  - Inculcate the appropriate attitudes and behavior ("humaneness," etc.)
- Didactic and practicum are integrated to the extent necessary.
- The clinical education is a planned educational experience.
- There are recognizable educational end points.

C. PROFESSIONAL ASSOCIATIONS

Professional associations synthesize and transmit the diversified experience and expertise of numerous practitioners to those concerned with the preparation of new practitioners and promote continuing education of the work force. They should carry out this function in a manner promoting protection of the health and safety of the public and preparation and maintenance of competent practitioners. At the same time, professional associations should guard against the possibility of more parochial self-interests compromising these broader-based and public-oriented goals.

Professional associations should promote quality in clinical education while encouraging flexibility and innovation. Quality clinical education is essential if individuals are to develop and then maintain the competency requisite for practice. Flexibility and innovation are essential to quality as well as to efficiency in today's world of rapid developments in health care and education. Professional associations can promote quality without constraining flexibility or innovation through:

- Definition of broad objectives for clinical education
- Provision of increased assistance to educational programs

Objectives for clinical education should be defined by professional associations for both basic occupational preparation programs and continuing education. In the former case, the knowledge, skills, and attitudes required for initial entry into an occupation at different levels should be identified with sufficient specificity to serve as useful guidelines for educational programs.

Objectives for continuing education should be sensitive to possible needs for differentiated knowledge, skills, and attitudes depending on specialization of work setting and role. They should recognize the different circumstances associated with reentry into occupations.

Objectives for clinical education should incorporate the insights of related practitioners as well as experts in education and occupational analysis. Professional associations should ensure that this occurs.

With educational objectives stated, professional associations should identify minimum requirements for student involvement in operational health care settings, with due attention to alternative instructional strategies and the use of a variety of health care settings.

Improvements are needed in the capability of professional associations to provide consultation to educational programs.

Dissemination of information on new developments in clinical education curricula and methods is a job for professional associations, as is more specialized assistance to programs which request it, for example, through consultation prior to the establishment of a new program.

Accreditation of allied health programs by professional associations should be reinforced and refocused in a number of ways to promote quality in clinical education. Its purpose and the intent and provisions of standards and guidelines should be clarified for practitioners, educators, students, and the public. Accreditation standards should be revised as necessary to provide for minimum constraints and maximum flexibility, consistent with attainment of the educational objectives.

Greater emphasis should be given to the clinical education component in all aspects of accreditation, from standards to on-site evaluation visits. Such visits should focus on the quality of the clinical education activity, including its management and evaluation. Premising accreditation on the definitions of required competency will provide a way to achieve flexibility without compromising quality.

Professional associations should work to minimize individual credentialing but encourage personal competency and responsiveness to health care needs. Credentialing is constraining by its very nature. Therefore, only essential credentialing of individuals should be supported by professional associations, which should improve certification processes to make them more responsive to health care needs.

Improvements in the certification process should include the elimination of requirements that are redundant or not directly related to competency. Professional associations should carefully examine requirements for graduation from an accredited program and passage of an exam. In addition, the examinations should be revised to incorporate developments in the definition of competency and to utilize the most effective psychometric techniques.

Professional associations should give particular attention to ensuring the continuing competency of practitioners. Certification programs should accommodate the requirement for continued competency, while recognizing any needs for specialization in work setting and/or role. Any such requirements should clearly recognize alternative approaches to demonstration and maintenance of competence.

The public has a valid and increasing interest in the preparation of allied health practitioners and the establishment of their competency. To ensure that their decisions reflect these interests, professional associations should establish systems to obtain broad-based advice and consultation on matters of educational requirements and certification. These systems should provide for input by members of related occupations, including medicine and nursing, as well as from informed representatives of the public, employers, and administrators.

D. STATE AND LOCAL GOVERNMENT

Government has inescapable responsibilities for the health of citizens, for the provision of educational opportunities, and for the interests and welfare of students that are not fully shared by any voluntary organizations. Government has, therefore, a role in the education and training of allied health manpower.

The direct involvement of state and local governments in clinical education for allied health manpower has been limited, consisting primarily of the conduct of clinical education programs in state institutions. Indirectly, state governments have been extensively involved in clinical education through the funding of postsecondary education and the operation of licensure programs.

A number of the current problems existing in the clinical education of allied health manpower require a greatly expanded role by state and local governments for their solution.

State and local governments should underwrite the costs of clinical education. States should recognize that the clinical education of allied health personnel is as essential as that of other applied disciplines. State and local governments should provide adequate financial support for the clinical component of curricula. While allied health programs have developed in public educational institutions, states have financed the costs of the academic phase, but they have not financed the clinical education phase in affiliated private health care institutions. Neither have they, in private health care institutions, supported nonacademic training programs.

Despite the continuing shift of these educational programs from hospitals and other health care institutions to educational institutions, it appears certain that a large number of such programs will continue to be conducted by the former. Thus, the concept of expanded state and local government financial support of clinical education of allied health manpower includes support of nonacademic allied health education programs which are based in health care institutions.

In addition, the states should support the development of competent clinical instructors, and should be a primary source of funds for the design and development of instructional aids and equipment.

The conduit for state and local funding should be the institution, which sponsors the education or training, be it an educational or health care institution.

State governments should improve their regulatory activities in allied health. In recognition of the principle that minimal credentialing is desirable, states should adopt a conservative approach to the establishment of licensure for additional allied health occupations. States which currently license one or more allied health occupations should take steps to improve and strengthen the process by:

- Increasing public representation on licensing boards
- Recognizing alternative approaches, through educational preparation and work experience, for development of competency in requirements for licensure

State and local governments should take the lead in developing and supporting continuing education. The need for continuing education in the health fields is now widely accepted as one of the necessary means to meet the growing public demand for consistently high quality health and medical care. The rapid progress being made in medical science and technology provides further justification of the need to provide a formal means for continuous upgrading of personnel in the allied health fields.

State governments should take the lead in developing and expanding continuing education programs. These programs should be given high priority to ensure that adequate resources, including funding, are appropriated by state and local governments.

State governments should play a major role in planning and coordinating clinical education. The limited resources available for clinical training justify planning on a regional, statewide, or multi-state basis. The Comprehensive Health Planning Agencies at the state and regional or areawide level should give emphasis to the provision of clinical education as they assume more responsibilities for health manpower.

The states should take a stronger leadership role in coordinating the education of allied health manpower. As part of the planning process, the states should seek to regionalize the utilization of available clinical education resources, in the interests of simple efficiency. The state is directly involved in postsecondary, collegiate, and vocational/technical education and can, therefore, promote cooperation and coordination between different levels within the educational system and between institutions at each level.

E. THE FEDERAL GOVERNMENT

That the Federal Government has a role in the clinical education of allied health manpower is obvious from the events of the past few years. The provision of Federal funds for education, Federal sponsorship of qualifying examinations for health manpower, and regulations governing the staffing of institutions serving Medicare and Medicaid patients are ample demonstration of Federal involvement in these matters.

This section will first review what the Federal role has been with respect to the clinical component of allied health manpower, and then present suggestions for Federal emphasis in the future.

The role of the Federal Government in the education of allied health manpower has been limited, although its effect has been widespread. Federal involvement in the education of allied health has consisted mainly in providing certain financial support for a number of educational programs, direct operation of some clinical education, development and demonstration of new educational programs and methods, and limited regulatory activities.

Federal funding of education of allied health personnel largely has been limited to financial support of operating costs and capital improvements. The objective has been to encourage establishment of new educational programs for allied health manpower and to improve and strengthen existing programs. Specific grants for this purpose have been made since 1967. In addition, the Area Health Education Center program funded by the government is designed to increase the total educational capability for health manpower and the effectiveness and efficiency of available resources through consolidation to achieve greater economy of scale. Efforts under the Manpower Development and Training Act have provided training aimed at meeting manpower requirements of employers primarily in the health field, at the aide and assistant level.

On a lesser scale, the Federal Government has also funded research and development activities designed to improve the education and utilization of allied health manpower.

The Federal Government has had only limited direct involvement in the regulation and control of allied health education. The credentialing process which the government has recently supported with research and development funds is a regulatory activity regardless of form, since its primary purpose is to protect the health and safety of the public. Accreditation, however, remains a function of voluntary organizations. As a matter of policy, the Federal Government has exercised very little influence over educational program accreditation in any field, including allied health. The government limits its role to the recognition of certain accreditation programs conducted by voluntary organizations.

Nevertheless, the Federal Government has had some influence in regulating education of allied health manpower through its recognition of voluntary accrediting agencies and its policy of limiting eligibility for categorical Federal funds for higher education to those educational programs which meet performance standards embodied in accreditation essentials. The result has been to bring financial pressure to bear on institutions which have not met these standards.

As accreditation and certification requirements have been established and amended, the trend has been to increase the length of formal training, both academic and clinical. There have been increased educational requirements and other prerequisites for certification and licensure, apparently designed in some instances to limit entry into the various allied health career fields and to increase the status of the occupation, rather than ensure proficiencies commensurate with the public health and safety. Thus, the effectiveness of allied health education may be reduced, while additional and largely unnecessary barriers impede the free flow of manpower. The government has been aware of the positive and negative aspects associated with rising manpower standards, but has not acted directly to modify them. Instead, Federal authorities have encouraged voluntary organizations (and supported them in Federally-sponsored meetings and studies) to consider accreditation and certification policies and procedures from the widest possible point of view. The effects of this policy of "anxious interest" cannot yet be measured.

The Federal Government directly provides clinical education programs for allied health manpower:

- The military services conduct educational programs for a number of allied health occupations.
- The Veterans Administration hospitals provide clinical education programs for many allied health occupations under affiliation agreements with many educational institutions.

This activity was originally designed wholly to meet the manpower needs of the Federal agencies. In recent years, much progress has been made in adapting this training to civilian standards or, more significantly, in modifying civilian manpower and educational credentialing to recognize the value of these Federal training programs. Federal programs have not, however, deliberately been planned as "laboratories" in which experimentation with training can take place.

In summary, the principal effect of the Federal Government on the clinical training of allied health manpower has been to stimulate an increase in the number of educational programs and the number of students. The additional demands on clinical training resources have not been offset by any significant flow of funds to clinical training authorities. Federal training funds have instead flowed almost exclusively to the institutions of higher education which provide academic course work.

Some Federal actions directly attack the problems highlighted in this report. The Bureau of Health Resources Development funds professional associations for studies to develop educational objectives. BHRD and the Manpower Administration fund development of improved proficiency tests. In addition, many BHRD contracts and grants are awarded for the purposes of improving educational methodologies or increasing the competency of instructors.

These efforts are hampered, however, by vacillating Federal policy with respect to allied health manpower, by a concomitant lack of resources devoted to these problems, and by a lack of understanding of how, and to what extent, the "system" should be improved. The dearth of reliable information on qualitative and even quantitative manpower requirements and the costs of education and training, among other subjects, contributes appreciably to the uncertainties involved.

Following is a discussion of a future role for the Federal Government in the clinical training of allied health manpower.

Certain existing problems can be handled most expeditiously on a national level. The Federal Government should address the major problems of clinical training where it takes the support of Federal dollars to bring about solution. The Federal role can be identified by two broad questions:

- What actions are required to solve the major problems?
- Of these actions, what is not likely to be done unless the Federal Government does it?

Government financial support is generally needed in the following areas:

- Areas requiring large amounts of risk capital. For example, students can be expected to pay for the cost of their training or a portion of the total cost. On the other hand, they cannot be expected to pay the costs of trying to develop better educational methods.
- Areas in which the public interest needs to be sufficiently represented. Thus, it is important that Federal Government help support the development of proficiency examinations.
- Situations in which the magnitude of the funds required is so great that they are not available from any other source.

Future Federal Government involvement should be designed to increase the effectiveness of education. The future role of the Federal Government in the basic occupational education of allied health manpower should be designed to increase the effectiveness rather than the prevalence of such education. A number of methods are available:

- Better definition of objectives, e.g., making education more relevant to work
- Improving program quality
- More careful rational planning for types and diversity of allied health manpower
- Clearer definition of the objectives of any particular educational program

1. THE FEDERAL GOVERNMENT SHOULD ACTIVELY PROMOTE THE IMPROVEMENT OF QUALITY IN THE CLINICAL EDUCATION OF ALLIED HEALTH MANPOWER BY THE USE OF FEDERAL FUNDS

With the increasing competition for funds within allied health education and the decreasing ability of health services organizations to pay for training, improving the quality of allied health education, especially clinical education, should be given high priority. The Federal Government should substantially increase its support of projects and activities which are designed to improve the quality of clinical education, including:

- Studies which more actively and precisely define the objectives of clinical training. These objectives should be set forth in terms of job requirements and should be done for any particular occupation on a national basis. While professional associations should do the work, they do not have the funds. The Federal Government should provide the funds.

- Research and development activities designed to improve the quality of clinical education:

    - Development, evaluation, and utilization of methods by which clinical experience can be stimulated

    - Development of student performance criteria (Standards) for clinical training

    - Development of methods to measure student performance (proficiency) in the clinical setting

    - Innovative methods of conducting clinical education

- Educational programs in highly specialized occupations where demand or clinical resources are limited and geographically dispersed. In such cases, programs should be organized to cover a wide enough region to provide sufficient employer demand and adequate clinical resources.

- Training of faculty.

- Development and maintenance of a health manpower information system. In health manpower education, there is an information function, e.g., basic data gathering that we are lacking in this study. This is a function of government at all levels, as the cost is high and there is no prospect of an immediate reward.

2. THE FEDERAL GOVERNMENT SHOULD PROVIDE STUDENT SUPPORT WHERE WARRANTED

The case for categorical undergraduate support in allied health programs, because of the high costs to sudents of clinical training, has not been made. The Federal Government should thoroughly investigate the extent of the problem and, if such support is warranted, provide it. Federal support to the student in these cases should be the same as that which applies to students in other fields who have similar problems.

3. THE FEDERAL GOVERNMENT SHOULD SUPPORT CONTINUING EDUCATION

The Federal Government should assume some responsibility for continuing education. It does little or nothing in this area at present. The basic governmental role should be to fund activities which develop curricula and educational materials.

In its direct provision of clinical education for allied health manpower, the Government should provide models of policy and procedure. With the Federal Government's direct training programs, it has the opportunity to carry out many of the recommendations embodied in this report, especially in connection with the recently expanded mandate of the Veterans Administration for the training of health manpower. Sufficient attention and financial support should be given to this educational function to encourage it.

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As spelled out above, the Federal Government should take a stronger role in increasing the effectiveness and improving the quality of clinical education of allied health manpower by providing necessary financial resources.